

THE EUCALYPTUS IN THE CAMPAGNA.—A paper was recently read before the London Pharmaceutical Society, wherein the following statement was made: In the Campagna, some three miles from Rome, a century or so ago, there was a village containing various churches and a monastery, which had to be abandoned on account of the malaria. Up to 1869 or 1870 the churches there were in ruins. Six years ago two French Trappists planted the *Eucalyptus globulus* in the village, some of the trees having now attained a height of thirty feet. For the last two years the monks have inhabited the ruined convent without suffering the least inconvenience, using, from time to time as a febrifuge, a decoction made from the leaves of the tree. Italian botanists and physicians are urging the Government to plant the *Eucalyptus* in quantity in the Campagna, believing that by its means these deadly plains may be restored to that flourishing condition they had once attained during the periods of early Roman history.

expressed my surprise to an intimate friend of mine, who replied: "If you will not mention it. I will state that the clergyman's wife, in a conversation with my wife, said: 'We employed Dr. —— to attend Mary, but he didn't charge anything; so we concluded that he could not be good for much, and now that Henry is so very sick we concluded to employ Dr. ——.'"

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FRENCH PRIZES.—The *Grand Prix Montyon de Médecine et Chirurgie*, valued at 10,000 francs, was taken by M. Onimus, his subject relating to investigations on the application of electricity to therapeutics.

M. A. Guerin also received a prize of 2,500 francs for an article showing the value of cotton dressings in the treatment of wounds.

MM. Bergeron and l'Hôte received 2,000 francs for a work on poisoning by the metallic poisons.

M. Rigaud received the *Prix Barbier* (2,000 francs) for his articles on the treatment of varicosities in the lower extremities and varicocele.

Chassagnon, of Lyons, received the *Prix La*



## The Yellow Fever.

The Rahway (N. J.) *Advocate* prints an extract from a private letter from Dr. Harvey E. Brown, the surgeon in charge of the yellow fever hospital at Fort Barrancas, Florida. The letter is dated August 30, and says: "We thought our epidemic was all over with here—but yesterday we got a case of yellow fever over from Fort Pickens—the first for thirty-two days—and to-day we have another. Now, perhaps you do not appreciate how important that is to us. When the epidemic first broke out among the troops here they were all removed to Fort Pickens, and for a few days thereafter many cases continued to come over—the last case was on the 27th of July—when, so far as the Fort Pickens community was concerned, the epidemic stopped. Why then should a case have occurred one month and two days after the last case was received from Fort Pickens? This is what I will tell you, and if you wish to communicate it to the papers, I have no objection to you doing so. It is an illustration of how careful it is necessary to be throughout the whole course of the epidemic of yellow fever to prevent the spread of the contagion to those not infected. Now, how do you suppose after thirty-two days' exemption from the fever at Fort Pickens, it could have broken out again? Most persons would say there was no way of accounting for it, but I have learned that last Monday, the 23d, some clothing was sent over from here to Fort Pickens which, by some blunder, was never disinfected, and the clothing was distributed to the two men who are now on this side sick with yellow fever, so that the manner of the communication of the poison is very easily accounted for."

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NAME UNKNOWN.

se15-4t

**The Best Brands.**

The best brands of cigars and tobacco are kept constantly on hand by Messrs. Herzog & Bachman, No. 240 Liberty street, and sold wholesale and retail at the lowest prices. Call and examine the goods.

NAME UNKNOWN.

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**Remember That**

The assignee's second great sweeping Auction Sale of Building Lots and Acre Lots of Land, on the Oberhelman Estate, Temperanceville, will take place this (Wednesday) afternoon, at 2 o'clock.

Property situate within a short distance of the new Point Bridge, and at the terminus of the Nicholson pavement.

Every lot must be sold, regardless of price, to close up the estate. Rare chance for good building lots and acre lots at an unlimited price.

Get plans from Jas. W. Drape & Co., Auctioneers, 182 Federal street, Allegheny.

NAME UNKNOWN.

se15-4t

**A Trifling Wound**

neglected, often assumes alarming importance. If Dalley's Magical Pain Extractor be applied at first, this cannot occur, nor can pain ensue. Sold by all druggists. 129

NAME UNKNOWN.

se15-4t

**Long Life.**

Long life may be attained in almost every case, if the person desiring it were to take his meals regularly at the Opera House Restaurant, Geo. Mashey, proprietor. Everything wholesome and good is provided, and the cooking is done on scientific principles. The bar and billiard rooms are unsurpassed in the city.

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the time "there were sixty-two cases at quarantine, from vessels arriving," it would be well to extend the same kind of caprice to other ports.

But we would on no account detract from "such agencies (as) are summed up in the two words 'general sanitation,' " the benefits of which are patent—but New York was not at the time designated by Dr. Heber Smith, and is not usually possessed of an extraordinary amount of "general sanitation." On the contrary, the local summer conditions of New York and surroundings, are singularly predisposing to the reception of epidemic poisons—and yellow fever is no exception—and for it especially these conditions have not hitherto been limited to such as are ordinarily summarized under the head of filth.

Dr. Reilly's citation in the case of the "*Gomer*," at Pensacola, is inaccurate. It was neither in 1842 nor 1843, but in 1838. Of which event the late Surgeon Isaac Hulse, U. S. Navy, who was at the time surgeon of the naval hospital at that place, related to the writer the following incident: The fever created a panic among the attendants of the hospital. To convince them that their fears were groundless, one of the medical officers of the "*Gomer*," wrapped himself at ten o'clock at night in the bedclothes of a person who had died of the black vomit, immediately after the removal of the dead body, and slept there the whole night through without taking the fever; and there was not an instance of a person in the hospital taking it. Moreover, Dr. Hulse added, there had never been an instance in connection with that hospital up to that time, 1847, where the fever was ever communicated by one person to another. But it is not necessary to follow Dr. Reilly, or to attempt any additional evidence of the non-contagiousness of yellow fever; it is a settled question. But this incident of the French surgeon is worth preserving for its bravery; the question of non-contagiousness was at that time not settled. It may be remarked also, in this connection, though of but little moment, that Dr. Reilly omits to mention the prevalence of the fever at Pensacola in 1847. It was attributed to the arrival of the U. S. ships "*Mississippi*" and "*Dale*," with the fever on

1876



These are both remarkable conclusions. There had been before, as there have been since General Butler's command in New Orleans, longer periods of exemption from yellow fever in New Orleans. Moreover, New Orleans was *not* exempt even during that period, even when there was no commerce at the port. Dr. E. Harris, in a paper entitled "*Hygienic Experiences in New Orleans during the War*,"\* enumerates, from the fleet in 1864, 191 cases; of employees at the naval hospital and landing on Erato street, 12; five other cases of black vomit, in citizens exposed to the same cause in the vicinity of the landing. The total number of cases was 208; deaths, 65. And he enumerates, among the hygienic lessons taught:

"That yellow fever, the most dreaded scourge of New Orleans, was unequivocally generated in a large number of filthy and unventilated gunboats and other naval vessels lying idly at the naval hospital landing in Erato street, and near New Levee and Tchapioulas streets. This affords significant evidence that the region of New Orleans and the lower delta of the Mississippi is within the yellow fever zone."

The impracticable and only means of disinfection mentioned by Dr. Reilly is the reduction of the temperature. Freezing the hold and bilge water of a ship—to say nothing of the mud between her limbers—a far more persistent hold of disease germs—"and to keep her in that condition (freezing) for four or five days," while the ship is resting in water usually above 70° F., is, to say the least, in view of the practical, economical and efficient use of steam and other means of disinfection, very remarkable.

Of Dr. Reilly's treatment of yellow fever, it will suffice to state that to practitioners who have been accustomed to permit the free use of ice in yellow fever for thirty years or more, his observations are surprising.

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\* Bulletin N. Y. Academy of Medicine, No. 30, September, 1865.



*Contagium (?) of Typhoid Fever*

contagium and the manifestation of the disease, during which the poison apparently lies dormant, but is in reality ripening towards an active condition. According to Dr. Klein, no other view of the poison affords any explanation of the incubation period. But hitherto no one has succeeded in pointing out any specific organic form as the probable cause of enteric fever, and hence the paper which Dr. Klein has prepared is one of the highest interest.

Preliminary investigations were made with the stools of enteric fever patients, and the microscopical appearances which they present are described at length in Dr. Klein's paper. Amongst the objects noticed are numerous bright, highly refractive, spherical micrococci of varying size, both isolated and in chains or necklaces, and at times rod-like structures from which these micrococci could be traced to originate; but it is not in the evacuations alone that these bodies are found; they have been observed in abundance in the mucous membrane of the ileum in the stages of the disease preceding general ulceration. In those parts of the ileum, which, at the commencement of the enteric fever, appear to the unaided eye only to be slightly increased in thickness, Lieberkühn's crypts are seen to contain in their lumen, in smaller or larger masses, corpuscles of greenish-yellow colour, highly refractive, varying in form and also in size from about twice the size of a human blood corpuscle to that of a minute granule, and it is evident from the appearances which they at times present that they multiply by transverse division. From the characters which they present, Dr. Klein arrives at the conclusion that they must be of the nature of organisms, and with regard to them he further states that we have to do "with a fungus which possesses mycelium threads of very unequal joints." In some parts of these threads, probably the terminal parts, "their contents split into macrogonidia or microgonidia," and the gonidia, when discharged, undergo rapid division, so as to form a kind of zooglœa. In short, a very definite conclusion is arrived at with regard to the identity of the contagium of enteric fever with a low vegetable organism.

The products of the fungus are also found in other parts of the mucous membrane. The gonidia form and the micrococci may be seen in the tissue of the mucous membrane close to Peyer's glands, and the micrococci especially occur in large masses in the lymph spaces surrounding Lieberkühn's crypts and the tissue next to it. The spores and micrococci also find their way from the surface through Lieberkühn's crypts into the lymphatics and bloodvessels. Both the organisms themselves and the various shapes and positions they assume are depicted in the clearest manner in the diagrams which accompany the report. Indeed, these beautiful illustrations from Dr. Klein's own pencil bring out the results of these investigations in a manner which must be most convincing to the eye of the anatomist and microscopist. One diagram shows how masses of these micrococci penetrate through the epithelium and accumulate in a space between it and the stroma of a villus; in another, the organisms are seen to penetrate from the free surface into the mouth of Lieberkühn's crypt; they are also seen to make their way into lymph spaces and into the walls of veins.

From these circumstances, Dr. Klein considers it clear that we have to do "with an absorption of masses of micrococci from the surface into the lymphatics and bloodvessels;" and he further shows that it is impossible that their presence can be due to post-mortem changes. These organisms, too, are identical with those observed in the alvine discharges of enteric fever patients, and, as we observed in a preliminary notice of this report, the appearances presented by the organism "correspond closely with those described by Cohn as characteristic of the vegetation discovered by him in well water in a district of Breslau famous for enteric fever."

Such results as these naturally give to this paper a special and distinctive interest; and, although, owing to the failure to communicate enteric fever to any of the lower animals, it has not yet been possible to perform, in relation to the supposed contagium of this disease, such crucial experiments as have been made with regard to some other diseases, yet a perusal of the facts recorded by Dr. Klein can leave but little doubt as to their reality, and, in the opinion of Mr. Simon, whose judgment in such a matter carries great weight, the inter-



pretation which has been assigned to them seems to follow as an inevitable consequence.—*British Med. Journ.*, March 25, 1876.

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*Treatment of Typhoid Fever.*

In his management of cases of typhoid fever, M. JACCoud has for some years adopted a special mode of proceeding, with, as he believes, unusually favourable results, in proof of which he appeals to statistics. Taking the records of hospitals for several years in some of the capitals and large cities of Europe, and grouping the whole, he finds the rate of mortality to average from nineteen to twenty per cent. In his own practice, at the Maison de Santé and the Hôpital Lariboisière, from January, 1867, to August, 1872, excluding the period of the siege of Paris, and also deducting the instances in which the patient sunk within five days after admission, twenty-eight deaths occurred in 282 cases, or, as nearly as may be, in ten per cent. Now, although the value of this evidence is somewhat diminished by the fact that the fatality of fever varies at different times, and that M. Gaultier de Claubry found that taking the whole of the mortality in the several epidemics which swept over France between 1841 and 1852, the percentage of deaths was about fifteen only; still the reduction is sufficiently considerable to merit a careful consideration. Other advantages are also claimed for his mode of treatment, amongst which may be mentioned diminution or prevention of meteorism; absence of secondary gastric disorder; rareness of bed-sores or of thrombosis; the substitution of a decided and complete declension for the more gradual fall which generally characterizes the subsidence of fever; and shortness of the period of convalescence.

Whatever theory be adopted as to the nature of typhoid fever, it is certain that the action of the poison has a very prostrating influence. Also, excluding abortive and speedily fatal cases, that it has a longer course than most acute diseases. There is an excessive production of heat, and a rapid consumption of the body. The complaint is very liable to be complicated by the supervention of broncho-pulmonary disorder. Hence, three paramount indications: to sustain the patient's strength; to diminish calorification; to ward off or check congestion of the lungs or air-tubes. These M. Jaccoud endeavours to fulfil as follows: He abjures from the commencement all debilitating measures, such as the purging until lately in vogue in the Paris hospitals. If needful, a mild laxative of Seidlitz water is given. During each twenty-four hours the patient takes a cordial mixture containing two or three scruples of extract of cinchona bark, two drachms of tincture of cinnamon, an ounce of syrup of orange-peel, three ounces of red Bordeaux wine, and an ounce of old brandy, which may be increased, as occasion requires, to three or four ounces. The main constituent of the food is beef-soup given at least twice daily, and which is thought to be much more nutritive and useful than our English beef-tea; about eight ounces of old Bordeaux wine are allowed, and this is taken alternately with the stimulant mixture just mentioned. The ordinary beverage is lemonade, containing one-fourth of red wine. If it appear needful, all this is supplemented at the end of the second week by nutritive enemata twice daily. This mode of alimentation is stated to be well tolerated by the stomach, and there is no note of its having any tendency to disturb the bowels.

When the patient's temperature reaches  $102^{\circ}$  Fahr., with a rise in the evening not above  $103^{\circ}$ , M. Jaccoud directs that twice during the day the whole body should be well sponged with aromatic vinegar. If the temperature rise higher, three, or even four, of these applications are made daily. They are continued, more or less frequently, until the close of the fever, and both comfort and benefit are derived from their refreshing and cooling effects.

Should any threatening of bronchial or pulmonary implication arise, this routine is not altered, but dry cupping is freely employed as a derivative. Its influence being very transient, it should be repeated at short intervals. So long as the indication for its use exists, M. Jaccoud advises that night and morning from forty to sixty cupping glasses should be applied over the base of the chest and over the lower limbs.



on or about June 1st the outlines of the opening remarks by the several reporters. Copies may be obtained on application to the Corresponding Secretaries.

The volume of Transactions will be published as soon as practicable after the adjournment of the Congress.

The public dinner of the Congress will be given on Thursday, September 7th, at 6.30 P. M.

*The registration-book will be open daily from Thursday, Aug. 31, from 12 to 3 P. M., in the Hall of the College of Physicians, N. E. corner 13th and Locust Streets. Credentials must in every case be presented.*

The registration fee (which will not be required from foreign members) has been fixed at Ten Dollars, and will entitle the member to a copy of the Transactions of the Congress.

Gentlemen attending the Congress can have their correspondence directed to the care of the College of Physicians of Philadelphia, N. E. corner of Locust and Thirteenth Sts., Philadelphia, Pennsylvania.

There is every reason to believe that there will be ample hotel accommodation, at reasonable rates, for all strangers visiting Philadelphia in 1876. Further information may be obtained by addressing the Corresponding Secretaries.

*All communications must be addressed to the appropriate Secretaries at Philadelphia.*

S. D. GROSS, M. D.,  
President.

WILLIAM B. ATKINSON, M.D., 1400 Pine Street, Recording Secretary. WILLIAM GOODELL, M.D., 20th and Hamilton Sts., DANIEL G. BRINTON, M.D., 115 S. 7th Street, American Corresponding Secretaries. RICHARD J. DUNGLISON, M.D., 814 N. 16th Street, R. M. BERTOLET, M.D., 113 S. Broad Street, Foreign Corresponding Secretaries.

Philadelphia, March, 1876.

THE "MILK EPIDEMIC" at Eagley, to which we have made reference two weeks since, is still causing a great deal of sensation in England and awakening a considerable amount of interest in medical circles in regard to its origin. As the result of a thorough investigation on the part of the health authorities, it seems that the fever—a mild form of typhoid—was clearly traceable to milk contaminated with water which was "so foully polluted as to render it little better than liquid sewage." It seems from more detailed reports which comes to us from across the water, that the earliest case was brought before the notice of the local authorities on Wednesday, the 9th of February, and that before the following Saturday evening there were between eighty and ninety persons confined to their beds with fever, eleven of whom eventually died of it. The suddenness and violence of the attack and its limitation to a small locality naturally suggested some local cause, and investigations were at once instituted to discover it. Eagley does not contain more than five hundred inhabitants, and the majority of these are employed in some tape and cotton thread works which are built on the stream running through the valley and passing by the lower part of the hamlet. It was soon discovered that in every case of sickness during the epidemic, the sufferers had been accustomed to drink milk from one particular farm, while those who had not been in the habit of drinking that milk, although living in the same house, invariably escaped the disease. A visit was next made to the farm, which showed that the milk cans were always washed with water from a brook which ran by a mill in course of construction, and that the workmen em-

ployed in the latter work had, for want of better conveniences, deposited their excrement upon the banks, whence the said excrement was washed into the stream by every fall of rain. The milk had been in this manner evidently contaminated with sewage matter. An examination of the water in the tubs left little doubt as to its sewage contamination, as it contained large quantities of free ammonia, albumenoid ammonia and chlorine.

The *Medical Press* and Circular (Mar. 1), in a leading article upon the subject from which we have condensed the above facts, says:—

"But as far as the etiology of typhoid fever is concerned, the great question is, whether this sewage-contamination was or was not of a specific nature. In most outbreaks of this kind, the water has been found to have been polluted with fever evacuations, and a more strict investigation will be necessary before it can be said that such was not the case in the Eagley epidemics. At all events, this and similar outbreaks show the necessity of ensuring the purity of all water that is used in dairy farms, and in the premises of all milk-venders."

UNIFORMITY OF WEIGHTS AND MEASURES.—Dr. E. Seguin of this city, who has within the past three or four years given a great deal of attention to the development of an idea to establish a unity of method in scientific observation throughout the world, proposes through the next International Medical Congress to infuse a more practical interest into the subject among medical men throughout the world. After referring to what has already been done in advocating the claims of such a uniformity of system, he says:—

"In furtherance of these antecedents, it is now proposed to submit the same question to the next International Medical Congress—to ask the Congress to constitute National Commissions, similar to the French one, which has volunteered its services in Paris; to appoint the next meeting of the International Medical Association, as the place where these Commissions will present a joint report on the most practical means of *uniformising* the methods, instruments, and records of observation; to consider the feasibility of this plan in connection to—but not by confounding it with—the adoption of the French Metric System; to entrust all the executive measures demanded for the realization of this plan to Dr. W. B. Atkinson, the General Secretary of both the American and the International Associations."

SLAUGHTERING-HOUSES.—The Health Commissioners, as the result of a recent tour of inspection of the different slaughtering-houses of this city, suggest that on the east side the butchers erect a capacious building near the water's edge, provided with all the modern improvements to preserve cleanliness and prevent waste of blood and the other matter now carried off by the sewers. This waste material can be made into fertilizers worth \$40 a ton. They maintain that no matter how much pains the butchers may take, they cannot profitably conduct a small slaughterhouse in such a manner that it would not prove detrimental to the health of those living in the neighborhood. On the west side the butchers could hire "baulks" in the abattoir at the foot of Thirty-fourth street, or unite and build such a building as is suggested for the east side. They are, therefore, convinced that the best interests of the city demand the removal of slaughter-houses beyond the more thickly inhabited quarters, and they will call for the enforcement of the ordinance that limits their remaining below One-hundred-and-tenth street to July 4, 1876.



## ARMY NEWS.

*Official List of Changes of Stations and Duties of Officers of the Medical Department United States Army, from February 12th to February 18th, 1876.*

MILHAU, J. J., Surgeon.—Leave of absence extended four months. S. O. 49, A. G. O., March 13, 1876.

FORWOOD, W. H., Asst. Surgeon.—Granted leave of absence for one month, with permission to leave limits of the Department. S. O. 43, Department of Texas, March 11, 1876.

ADAIR, G. W., Asst. Surgeon.—Assigned to temporary duty as Post Surgeon at Fort Richardson, Texas. S. O. 43, C. S., Department of Texas.

MAUS, L. M., Asst. Surgeon.—When relieved at Nashville, Tennessee, by Asst. Surgeon Greenleaf, assigned to duty as Post Surgeon at Chattanooga, Tenn. S. O. 39, Department of the South, March 16, 1876.

## Medical Items and News.

INTERNATIONAL MEDICAL CONGRESS, Philadelphia. Preliminary Programme.—The Congress will meet at noon, on Monday, September 4th, 1876, in the University of Pennsylvania. The following addresses will be delivered in general meeting:—On Medicine, by Prof. Austin Flint, M.D., New York. On Hygiene and Preventive Medicine, by Henry I. Bowditch, M.D., of Massachusetts. On Surgery, by Prof. Paul F. Eve, M.D., of Nashville. On Obstetrics, by Prof. Theophilus Parvin, M.D., of Indiana. On Medical Chemistry and Toxicology, by Prof. Theodore G. Wormley, M.D., of Columbus, Ohio. On Medical Biography, by J. M. Toner, M.D., of Washington, D. C. Address, by Prof. Hermann Lebert, of the University of Breslau. On Medical Education and Medical Institutions, by Prof. Nathan S. Davis, M.D., of Chicago. On Medical Literature by Prof. L. P. Yandell, M.D., of Louisville. On Mental Hygiene, by John P. Gray, M.D., of Utica, N. Y. On Medical Jurisprudence, by Prof. S. E. Chaillé, M.D., New Orleans. Discussions on Scientific Subjects will be opened in the sections as follows:—

SECTION I. MEDICINE.—Typho-malarial Fever; is it a special Type of Fever? J. J. Woodward, M.D., Assistant-Surgeon, U.S.A. Are Diphtheretic and Pseudo-membranous Croup Identical or Distinct Affections? J. Lewis Smith, M.D., of New York. Do the Conditions of Modern Life favor specially the Development of Nervous Diseases? Prof. Roberts Bartholow, M.D., Medical College of Ohio. The Influence of High Altitudes on the Progress of Phthisis, Charles Denison, M.D., of Denver, Colorado.

SECTION II. BIOLOGY.—Microscopy of the Blood. Prof. Christopher Johnston, M.D., of Baltimore. The Excretory Function of the Liver. Prof. Austin Flint, Jr., M.D., of New York. Pathological Histology of Cancer. Prof. J. W. S. Arnold, M.D., of New York. The Mechanism of Joints. Prof. Harrison Allen, M.D., of Philadelphia.

SECTION III. SURGERY.—Antiseptic Surgery. Prof. John T. Hodgen, M.D., of St. Louis. Medical and Surgical Treatment of Aneurism. Prof. William H. Van Buren, M.D., of New York. Treatment of Coxalgia. Prof. Lewis A. Sayre, M.D., of New York.

The Causes and Geographical Distribution of Calculous Diseases. Claudius H. Mastin, M.D., of Mobile, Ala.

SECTION IV. DERMATOLOGY AND SYPHILOLOGY.—Variations in Type and in Prevalence of Diseases of the Skin in Different Countries of Equal Civilization. Prof. James C. White, M.D., of Boston. Are Eczema and Psoriasis Local Diseases, or are they Manifestations of Constitutional Disorders? Lucius Duncan Bulkley, M.D., of New York. The Virus of Venereal Sores; its Unity or Duality. Prof. Freeman J. Bumstead, M.D., of New York. The Treatment of Syphilis, with Special Reference to the Constitutional Remedies appropriate to its various Stages; the Duration of their Use, and the Question of their Continuous or Intermittent Employment. Prof. E. L. Keyes, M.D., of New York.

SECTION V. OBSTETRICS.—The Causes and the Treatment of Non-puerperal Hemorrhages of the Womb. Prof. William H. Byford, M.D., of Chicago. The Mechanism of Natural and of Artificial Labor in Narrow Pelves. Prof. William Goodell, M.D., of Philadelphia. The Treatment of Fibroid Tumors of the Uterus. Washington L. Atlee, M.D., of Philadelphia. The Nature, Causes, and Prevention of Puerperal Fever. Prof. William T. Lusk, M.D., of New York.

SECTION VI. OPHTHALMOLOGY.—The Comparative Value of Caustics and Astringents in the Treatment of Diseases of the Conjunctiva, and the Best Mode of Applying them. Prof. Henry W. Williams, M.D., of Boston. Tumors of the Optic Nerve. Hermann Knapp, M.D., of New York. Orbital Aneurismal Disease and Pulsating Exophthalmia; their Diagnosis and Treatment. Prof. E. Williams, M.D., of Cincinnati. Are Progressive Myopia and Posterior Staphyloma due to Hereditary Predisposition; or can they be induced by Defects of Refraction, acting through the Influence of the Ciliary Muscle? E. G. Loring, M.D., of New York.

SECTION VII. OTOTOLOGY.—Importance of Treatment of Aural Diseases in their early Stages, especially when arising from the Exanthemata. Albert H. Buck, M.D., of New York. What is the Best Mode of Uniform Measurement of Hearing? Clarence J. Blake, M.D., of Boston. In what Percentage of Cases do Artificial Drum-membranes prove of Practical Advantage? H. N. Spencer, M.D., of St. Louis.

SECTION VIII. SANITARY SCIENCE.—Disposal and Utilization of Sewage and Refuse. John H. Rauch, M.D., of Chicago. Hospital Construction and Ventilation. Prof. Stephen Smith, M.D., of New York. The General Subject of Quarantine, with Particular Reference to Cholera and Yellow Fever. J. M. Woodworth, M.D., Supervising Surgeon-General U. S. Marine Hospital Service. The Present Condition of the Evidence concerning "Disease-germs." Thomas E. Satterthwaite, M.D., of New York.

SECTION IX. MENTAL DISEASES.—The Microscopical Study of the Brain. Walter H. Kempster, M.D., of Oshkosh, Wisconsin. Responsibility of the Insane for Criminal Acts. Isaac Ray, M.D., of Philadelphia. Simulation of Insanity by the Insane. C. H. Hughes, M.D., of St. Louis. The Best Provision for the Chronic Insane. C. H. Nichols, M.D., of Washington, D. C.

Gentlemen intending to make communications upon scientific subjects, or to participate in any of the debates, will please notify the Commission before the first of August, in order that places may be assigned them on the programme.

In order to facilitate debate, there will be published



30th, three young men; and December 1, one lady. The above cases were all under my care in the school-buildings. Twenty-five other cases were treated at their homes; they were attacked by the disease before going home or soon after arriving. Of the twenty-eight cases treated in the school, three died,—the young man whose case is detailed above, another young man 18 years of age, and a girl of 14. The second young man died December 13, fourteen days after he took to his bed. This case seemed, up to the last two days, one of the mildest, except that the pulse was frequent,—from 110 to 160. There was no pain, and the appetite was good, but there was profuse perspiration from the commencement of the disease. The bowels were regular. Every day he said he felt well and wanted to sit up. On the twelfth night of the disease I was called, and found him suffering with intense pain in the head, face flushed, conjunctiva injected; the whole body covered with an eruption, the same as that of the former fatal case. He went into a state of collapse, and died with symptoms like those of the other young man. In this case there was no diarrhoea, tenderness over the bowels, or tympanitis.

The other fatal case was a girl, rather slender, and of poor health. She had suffered several times from pneumonia. She was taken sick on November 23, and died December 1, from double hypostatic pneumonia.

Of those who were treated at their homes, five died; they all terminated some time during the end of the fourth week, and all had hemorrhage from the bowels.

The following are the prominent symptoms in all of my cases that recovered. The disease commenced in most cases with a general feeling of malaise, weariness, pain in the limbs. The countenance was dull, appetite diminished; the tongue coated and swollen. In some cases there was vertigo with frontal headache; the patients were restless at night, disturbed by dreams. In some cases there was diarrhoea, with pain in the bowels and stomach. In most cases following the above symptoms came a distinct chill, or a sense of chilliness with rigors, followed by a rapid increase of temperature from  $103^{\circ}$  to  $105\frac{3}{4}^{\circ}$ , with dry skin. Later in the disease the pain in the head increased. In others severe pain in the back occurred

at the end of the first week; most of them became delirious. There were great thirst and dryness of tongue and throat; tongue tremulous when protruded. Epistaxis occurred in five cases. Diarrhoea was present in all cases in first week, and was troublesome throughout the disease. All the patients vomited large quantities of bile during the high temperature. In second week the headache disappeared; patients became drowsy, and affirmed that "they felt well."

The fæces and urine were passed involuntarily in all cases. The rose-rash was distinct in all cases in the last of second and through the third week. In two cases there was profuse bloody expectoration, accompanying hypostatic congestion of the posterior lower lobes of the lungs. The fever did not tend to diminish or change into the usual subcontinuous or remittent form by increasing the morning remissions, until in the end of the fourth, and in some cases the fifth week.

In the latter stages the weakness was excessive, the patients lying relaxed in the lowest portion of the bed, in a condition of such profound stupor that they could scarcely be aroused by loud cries, or by pulling, pinching, etc., sufficiently to take their medicine and nourishment.

When the third case was attacked (the first young man who died), the water which he drank was suspected, and the pump-rod immediately withdrawn. As soon as it was evident that we were in the midst of such influences, the school, which consisted of thirty-four males and thirty-five females, was closed; all were compelled to leave the buildings as soon as attendants could be procured to take care of their school-mates; but at this time many who lived long distances from the school began to feel the effects of the disease and were compelled to remain.

The two school-buildings are constructed of brick, and are located on the side of the hill, one hundred and forty feet above the level of the river.

The water-supply for the last ten years has been from an artesian well one hundred and forty feet deep,—one hundred feet being through solid rock,—the water being pumped by an engine into the buildings. About forty feet back and east of the gentlemen's building was a surface-well twenty feet deep; forty feet southwest of this well was a large privy-vault, which has



been used for twelve years; this was emptied by a sewer that discharged a long distance west of the buildings, and was frequently cleansed with water. Another drain extended from near the surface-well to the vault-drain, a few feet below the vault, to carry surface-water from around the well. This surface-well was used for all purposes up to the time the artesian well was ready for use, ten years ago. Since that time many of the students preferred the water from the shallow well.

A sample of water from each well was sent to Prof. Latimer, of Rochester University, to be tested. (Meantime, all water that was used about the sick and for all purposes was drawn from wells in town.)

The following is given by Prof. Latimer:

"The sample A (from artesian well) contains but a small quantity of mineral matter, chiefly carbonate of lime.

"The sample B (from surface-well) contains little mineral matter, mostly carbonate of lime; but abounds in organic matter. It literally swarms with fungoid organisms, and also contains very many animalculæ, besides much *débris* of both these classes of organisms in various stages of decomposition. Chemical tests show the most positive evidence of sewage-contamination in large degree. In short, I have rarely if ever examined a water which, on chemical and microscopical evidence alone, I should consider so dangerous."

The shallow well was abandoned and filled up. The vault was emptied of its contents, and all the adjoining soil, which was saturated, excavated, and the place thoroughly disinfected and filled up with fresh earth. The buildings were thoroughly cleansed and disinfected throughout, and the usual good health of the school has continued since its reopening, January 6. There was never a case of typhoid fever in the school since its foundation until the above epidemic. A German who worked around the buildings during the fall and drank the water from the infected well, but who resided across the river, took the fever about the same time the students came down; the disease resembled those in the school, and ran about the same course. None of the hired help had the fever, except a young man who was in the habit of drinking the infected water; the others all drank water from the deep well.

From the above evidence there is no doubt in my mind that the sewage from

the privy-vault, after a number of years, had found its way through the soil, and, by backing up the drain, contaminated the water; and that this was the sole cause of this fearful epidemic.

MANSFIELD, TIOGA CO., PA., October 9, 1875.

## YELLOW FEVER IN THE SOUTH ATLANTIC SQUADRON IN 1874-5.

BY W. F. WAUGH, M.D.,

Assistant-Surgeon, U.S.N.

**D**URING the cruise of the U. S. S. *Monongahela* on the Brazil station, we were three times visited by yellow fever, losing one case at each time. These attacks occurred shortly after our arrival at Rio de Janeiro, from long cruises at sea, where the men had had no opportunities of obtaining fresh provisions, and had been confined to the ship for long periods.

The first peculiarity which arrested my attention in this disease was that the men did not come to sick-call. They lay down in some quiet corner while their mess-mates reported their illness to the surgeons. This at once impressed me with the gravity of the disease, for Jack is ever ready to besiege the doctor for an excuse from duty for any slight disorder.

Their only complaint at first was of severe frontal headache, soon followed by pains in the back and calves. The face had a dusky flush; the eyes were dull, the conjunctivæ muddy and slightly jaundiced; the skin dry and burning; the tongue coated, but clean in the centre and at the tip and edges. On inquiry, I found the bowels were confined, the appetite lost, though there was no nausea; and the urine was suppressed. Only an ounce could be obtained by the catheter, and this threw down nearly half of its bulk of albuminous precipitate. The pulse was 110, the axillary temperature 105° Fahr., slightly more in fatal cases, slightly less in those which recovered. Nausea and vomiting followed every attempt to administer medicines or food.

After the remission all the symptoms were aggravated, black vomit came on with uræmia, and the patients died in the greatest agony. The whole aspect of the disease struck me with a conviction that we had to do with something entirely different from anything I had ever seen before. At the same time we had cases of



six cases as having occurred in one family, the vault in this instance also being found to communicate with the well. An epidemic prevailed at a girls' school at Burlington, N. J., about one year ago, the origin of which was investigated by Dr. Le Conte, (formerly Medical Inspector of the U. S. Army) and attributed to the drinking water. Two cisterns had been dug to receive only Delaware river water, but some time after their construction, spring water had been let into them without the knowledge of the authorities. Eighteen months after this, privy vaults were dug within twelve feet of the cisterns. "Three years elapsed," continues the report, "during which the poisonous infiltrations from these vaults were slowly but surely making their way down to the springs which had free ingress into the cisterns. At the end of that time the mine exploded. Pupil after pupil was seized with typhoid fever, and the school had to be closed. Two remarkable facts are mentioned by Dr. Le Conte, which prove beyond question that this water contained the *materies morbi*, and nothing else: first, that none of the servants were attacked, because they drank only tea and coffee, in which heat had destroyed the vitality of the poison; second, that of seven pupils who were exclusive water-drinkers, the enormous proportion of six were seized with the disease." (Trans. Penn. State Med. Soc'y 1875.)

Another noted instance of the production of this fever by impure drinking water, is that at the Gregory House at Lake Mahopac. Suffice it to say that in 1871, 1873 and 1874 cases of typhoid fever occurred in this house, which were each year traced to the accidental contamination of the water in the cistern, by the gases and water from an unused tank in close proximity, which contained the washings of the kitchen, in addition to decaying vegetable matter. (Sanitarian, June 1875). In Boston, previous to the introduction of Cochituate water, the typhoid deaths were 11 to 24 in 10,000 living; since the use of well water was abandoned, only 4 to 6 in 10,000. The fact that this is a rural disease would seem to lend strength to the argument in favor of the theory of its dependence upon water-pollution; since in the country, there are so many sources of contamination, such as manure heaps, vaults, decaying vegetation, etc., in proximity to the wells and springs which are the only sources of water supply.

Many careful observers believe that a malarial influence enters into the causation of typhoid, and this influence we know to be more



powerfully at work away from crowded cities and towns. The only ward of this city where we expect to find malarial fever, uniformly reports the largest number of typhoid fever cases. Liebermeister regards this disease as belonging to the "miasmatic contagious" class, along with cholera, dysentery, etc. There must be two stages of development of the poison, one within and one without the body. The discharges of the patient contain the poison, but they are innocuous when fresh. They undergo some change after exposure, whereby they acquire the power of reproducing the disease, "particularly when they come in contact with great quantities of organic substances that readily decompose, as in water-closets, dung heaps, sewers, or in damp soil rich in organic debris." (*Ziemssen's Cyclopædia*.)

Pettenkofer and Buhl have demonstrated, by observations running back fifteen years, that in the city of Munich, where this disease constantly extensively prevails, the epidemics of the fever have a direct relation to the height of the ground water; and during the period named, the degree of danger from typhoid has been correctly indicated by the depth of water in the wells. When the water was low, the mortality was high, and *vice versa*. P. believes that the fever germ is the result of "organic processes" taking place in the earth, and that the water is only an index to these. He holds that air from the soil, and not polluted water, is the origin of typhoid fever. In England, where the disease is believed to depend largely upon filth, and where "filth fever" is the common name for it, P's facts are interpreted to mean that when the ground water is low, the porous soil retains foul matters, and "the area of drainage for each well is greatly increased" and hence a larger proportion of filth finds its way into drinking water. Liebermeister's conclusions are somewhat similar: "It is evident, as a matter of ordinary experience, that, *cæterus paribus*, the water of any spring is purer the higher it is. The lower the water is, the greater must be the relative proportion of solid matters dissolved or suspended in it." (*op. cit.*)

But Liebermeister claims that water or air, in order to produce typhoid fever, must be not only polluted, but polluted with the specific poison derived from some previous case. Here is the question upon which so many excellent authorities differ. The summary of Dr. Derby (*op. cit.*) after a careful study of the causes of this disease in Mass., aided by the correspondence of many of her best physicians, contains the following conclusion: "The single continuous



thread of probability which we have been able to follow in this inquiry, leads uniformly to the decomposition of organized substances as the cause of typhoid fever as it occurs in Massachusetts. Whether the vehicle be drinking-water made foul by human excrement, sink-drains or soiled clothing, or air made foul in enclosed places by drains, decaying vegetables, or fish, or old timber, or in open places by pig-styes, drained ponds or reservoirs, stagnant water, accumulations of filth of every sort, the one thing present always is *decomposition*." Here, it will be seen, no *specific germ* is believed to be necessary to the production of the fever. How much of the influence is what we call malarial, it would be difficult to say.

No less distinguished an authority than Murchison teaches also the doctrine of the dependence of typhoid fever on putrefaction, and embodies this doctrine in the name "pythogenic fever," which he proposes for the disease. Dr. Bowditch says: "fetid smells and impure water can alike produce typhoid fever of a virulent and fatal type." John M. Fox, an English Medical Officer of Health, says: "filth, polluting air or water, or both, is the sole, simple cause, and the removal of filth, in such a way that neither air nor water shall be polluted thereby, means the extinction of typhoid fever." [*Sanitarian, Vol. 2.*]

Flint says: "Facts warrant the belief that under certain circumstances the special cause of this disease may be a product of decomposing changes taking place in human excrement." [*Public Health Papers, Vol. 1.*]

Sir Wm. Jenner says: "There are a sufficient number of cases recorded to make it probable that the admixture of sewerage—not typhoid—with drinking water, and the breathing of sewer gas continuously for some time, especially at night, are able to produce typhoid fever *de novo*." [*Lancet, Feb. 1875.*]

Sir Wm. Gull more cautiously remarks that "the origination of the disease is somehow or other connected with drainage. It has therefore been called the "filth fever." Hence to get rid of the filth is to get rid of the fever. [*Lecture in 1872.*] Parkes says: "That enteric fever may arise from the effluvia from sewers, is a doctrine very generally admitted in this country, and is supported by strong evidence. [*Hygiene, p. 121.*] I might occupy pages in citing authority in favor of the spontaneous generation of typhoid fever from filth, polluting air and water, but let this suffice.



Another doctrine, which now perhaps meets with more general acceptance, is that "a specific cause is necessary; that this cause is present in the intestinal discharges; and that sewers and fæcal effluvia, and fæcal impregnation of water, are the channels by which this specific cause reaches the bodies of those persons who may be susceptible." That the detritus of Peyer's glands, thrown off in the diarrhoeal discharges, does contain the poison of the fever, just as do the crusts from the body of a small-pox patient, seems a natural supposition, since in the intestines is found the peculiar and constant lesion of the disease, produced, it is claimed, by the effort of the system thus to eliminate the poison. This view now meets with little opposition, and is advocated by such men as Budd, Simon, Gull, Parkes, Liebermeister, and other equally well-known and competent observers. Even those who claim that the disease may arise without the medium of a specific poison, accept this as a settled point. Flint, for example, says: "In typhoid fever the contagium is in the dejections, but facts render untenable the theory that the disease is never produced otherwise than by the introduction of a special virus into the system" [op. cit.]

That decomposing animal and vegetable matter, and especially human excrement, serves as a suitable soil for the growth of this contagium, which may thereby, by poisoning air and water, become the cause of the rapid spread of the disease, is also now generally believed, especially by those who give attention to the practical operations of sanitary science. Illustrations of this point in recent years have been so frequent, that the truth of the theory cannot be doubted. There is more doubt as to the constant *specific origin* of the disease. The many outbreaks of the disease originating in the use of contaminated water or milk, accounts of which have appeared in the journals of the past few years, the opponents of the *decomposition* theory claim were due to the fact, not of simple pollution of water or milk by the products of putrefaction, but to a *specific* pollution by typhoid excreta, and that the source of this pollution can by close observation very generally be discovered, as in the following notable instances. About 500 cases of typhoid fever occurred in 104 families in the west end of London in 1873. Of these 104 families, 96 are known to have used milk from the same dairy, while the facts as to the source of the milk supply in the other 8 families has not been ascertained. At the dairy farm two cases of typhoid had oc-



## Original Communications.

### REMARKS MADE BEFORE THE NEW YORK COUNTY MEDICAL SOCIETY, OCTOBER 12TH, 1875,

ON A PAPER READ BY DR. W. T. LUSK, "ON THE GENESIS OF AN EPIDEMIC OF PUERPERAL FEVER."

By FORDYCE BARKER, M.D.

MR. PRESIDENT AND GENTLEMEN:—I have listened with great interest to the paper that has been read, which I believe is the first effort of the kind to trace out the origin and development of puerperal fever by an exclusive and systematic study of its genesis, unbiassed by a preconceived theory as to the nature of the disease. It is obvious that study in this direction, if conscientiously and intelligently carried out, must be of great value in clearing up much of the obscurity which surrounds a subject that has been so fruitful in provoking discussion, and has resulted in such a diversity of theory and doctrine.

I am quite certain that all who have heard the paper read must have been struck by the marked ability and faithfulness with which the observations have been made, and the thorough honesty with which they have been reported.

I do not purpose now to offer any general remarks on the disease, but simply to make a few comments on certain points that suggest themselves to my mind by this paper, which is exclusively confined to a detail of such facts as relate to the genesis of puerperal fever in hospitals. While the immense value of hospitals is acknowledged by all, although but imperfectly appreciated by many, their usefulness and importance reach far beyond the inmates who secure the advantage of skilled and experienced physicians and surgeons in relieving suffering, in prolonging and in saving life; for by their educational mission as great schools for clinical study and clinical teaching, they radiate their blessings to every one who suffers from medical or surgical disease, in every part of the country: yet it is a deplorable fact that the hospitals themselves often originate diseases, which to a certain degree detract from their usefulness. That the good which results from them is infinitely beyond the evil, is I think so evident that no argument is needed to prove the assertion.

But in hospitals lacking in proper hygienic conditions, there is generated a poison or miasm, that develops a class of diseases, attended by a change in the fluids of the body, which are called septic diseases.

The septic diseases which peculiarly belong to hospitals, are hospital gangrene, pyæmia, septicæmia, erysipelas and puerperal fever. Their existence in hospitals is a reproach to the profession, just so far as the medical boards have the control and the power of preventing the causes. Some of these septic diseases often occur as an endemic in a hospital, but are never met with as epidemics. Pyæmia and septicæmia are never found as epidemics in private practice or in rural districts; and I have the authority of Professor Erichsen for saying that these are very rare surgical diseases in private practice. I think that these facts have a very important bearing in aiding us in settling the question as to the nature of puerperal fever. Other septic diseases—erysipelas, diphtheria, and puerperal fever—do



## AL RECORD.

The great practical end in view in the study of the genesis of puerperal fever is, to ascertain what causes of the disease are preventable. A very great advance has been made within a few years in our knowledge of the various agencies which contribute to septic poisoning, and still more striking has been the addition to our resources in the use of antiseptic remedies. Every intelligent obstetrician appreciates, at the present day, as they did not in former periods, the great importance of averting all the predisposing causes of the disease in the patient herself, by an efficient treatment of anæmia and albuminuria in the last periods of pregnancy, a condition which so tends to blood deterioration, and which so favors the absorption of septic poison—by securing to the patient perfect ventilation and good air during labor and the puerperal period, and avoiding the old error of keeping the room too hot, with every crevice closed that will admit air; by preventing delay in labor, in the early resort to the use of the forceps or other resources of our art, when necessary; by effecting the early removal of the placenta by compressing the uterus, thus securing the efficient and permanent contractions of this organ, and thus preventing the retention and decomposition of clots, and the torture and exhaustion of after-pains; by removing immediately after labor all soiled clothes and bedding, and carefully watching that none are ever after permitted to contaminate the patient; by antiseptic washes and injections, to prevent autogenetic poisoning; by good nutrition; and lastly, by guarding the patient against the dangers of infection or contagion through the medium of the nurse or the obstetrician. This is a very rapid and by no means complete exposition of the resources we have at command for averting danger from puerperal fever. The success of Winkle, at Dresden, as we have just heard in the paper of Dr. Lusk; the most excellent paper by Dr. William Goodell, "on the means employed at the Preston Retreat for the prevention and treatment of puerperal fever;" the remarkable sixth clinical report of the Rotunda Lying-in Hospital of Dublin, by the master, Dr. George Johnson, ought greatly to encourage the belief that by these and similar prophylactic measures the chances of an invasion of puerperal fever, even in hospitals, may be reduced to a minimum.

But there still remain as great determining causes of this fearful disease, nosocomial malaria and epidemy. How to overcome and to exterminate nosocomial malaria is the great problem which I confidently hope will be solved by the progress of science at no remote period. The devastation which results from this cause, in obstetrical and surgical hospitals, have led some to the extreme folly of questioning the usefulness of hospitals, and others to urge as a radical necessity the extravagantly expensive procedure of pulling down all the old hospitals, and of reconstructing them of such materials that this process can be repeated every few years. But, in the first place, this is not demonstrated to be a radical preventive of the septic diseases which result from nosocomial malaria, for there are well-authenticated reports of puerperal fever in new hospitals for maternity, and of pyæmia and of septicæmia in new surgical hospitals among the first patients received into them. In the second place, I cannot believe that chemical science is so powerless as to fail in finding some means of wholly exterminating this miasm. The experiment has been already successfully tried in this city. I was struck by the remark in the paper of Dr. Lusk, that after the lying-in wards at Bellevue were given up on account of puerperal fever, they were occupied as surgical wards in the service of Dr. James R. Wood, and that

*of Cincinnati*

*Dr. T. C. Minor a book on*

*"Erysip. & Puerp. Fever"*  
*Virchow has called puerp. fever*  
*"malignant puerperal erysipelas."*



not a single case of septic disease has occurred in them. I am informed by Dr. Dennis, house-surgeon at the present time, that there have been eighteen amputations in patients in these wards, and not a single death. But in some of the surgical wards the fatality from septic disease was really frightful, as reported by the surgeons in attendance; and Prof. Doremus was employed by the Commissioners to disinfect them. I will give his method of procedure, as I wrote it down from his verbal statement to me.

The purification of the surgical wards in Bellevue Hospital was accomplished during the spring and summer of 1875, by the employment of large volumes of *chlorine* gas.

This powerful disinfectant was resorted to because all the poisonous emanations from the human system are decomposed by it, and thus rendered inert (carbonic acid gas excepted); also because of its diffusive power. Strips of paper were pasted over the crevices around the windows and doors, before generating the chlorine.

Two sheets of lead about eight feet long and four feet wide were turned up at their edges and placed on the floor of the ward to be treated.

In these leaden receptacles several hundred pounds of black oxide of manganese and common salt were placed, to which water was added until the mass, when thoroughly stirred with wooden shovels, had the consistency of a thick mud.

Bowls, basins, and pitchers of sulphuric acid were placed around the leaden vessels in readiness to be applied to the black mixture. To eliminate all the chlorine, the acid should equal the weight of the salt and manganese combined. Water was then poured over the floor to dampen the wood, and the ward was filled with steam until the moisture condensed on the ceiling and walls. The air of the room was so saturated with partly condensed vapor that we had to grope our way towards the vessels containing the sulphuric acid.

The several assistants then held said vessels over the mixture of manganese and salt, and at a signal all poured out the acid at the same time; then hastened to the second leaden trough, applied the acid and rushed out of the door to escape inhaling the chlorine gas which was liberated in immense volumes. Since the amount of poisonous gas was so great that it would have proved fatal to any one entering the apartment, the doors were securely fastened to guard against such an accident.

After the lapse of twenty-four hours, the vessels were again filled with sulphuric acid and placed around the leaden pans. The mixture was then rapidly stirred, and the second application of acid made as in the first instance.

For these two treatments about a carboy of sulphuric acid (160 lbs.) was employed.

After a second twenty-four hours' exposure of the ward to this gas, the windows were thrown open, the residuum of sulphate of manganese and sulphate of soda was removed, with the leaden and other vessels, and the walls and floor scrubbed and dried.

The chlorine was generated by this method, rather than by the addition of hydrochloric acid and manganese, not only because it is cheaper, but because the heat generated by mixing sulphuric acid and water rarefies the gas and facilitates its dissemination through the room and its passage into the porous walls.

Chlorine is comparatively inefficient unless moisture is present, hence steam was employed as described.

After one ward had been thus disinfected and ventilated, the same large leaden vessels were taken to an adjoining ward and the process repeated.



by the Roman bathers, is well set forth in Bulwer's ingenious romance, "The Last Days of Pompeii," which was written during a residence at Naples, with frequent visits to the baths he describes. Glaucus and Lepidus, two of the personages of the story, after their progress through the bath, meet at last in the *tepidarium*, or warm air-chamber, where, says the author:

"Now the main delight and extravagance of the bath commenced. Their slaves anointed the bathers from the vials of gold, of alabaster or of crystal, studded with profusest gems, and containing the rarest unguents, gathered from all quarters of the world. The number of these smegmata used by the wealthy would fill a modern volume—*Amoracinum*, *Megaliun*, *Nardum*,—*omne quod exit in unum*,—while soft music played in an adjacent chamber, and such as used the bath in moderation, refreshed and restored by the grateful ceremony, conversed with all the zest and freshness of rejuvenated life."

It must not be supposed, however, that the anointing process was by any means confined to those who bathed in a state of health. Galen, in his tenth book, in describing the treatment of a case of marasmus by means of the bath, explicitly directs that the patient be carried into the tepidarium, where his whole body must be anointed with oil. Celsus also, in prescribing bathing for those who suffer from affections of the head, not only directs a preliminary anointing, but also says that at the conclusion of the bath the head ought to be rubbed for some time, afterwards dried, and then anointed anew.

Frequent allusion is made to this process in Cameron's "Baths of the Romans," which was published over a hundred years ago, and the late Dr. John Bell, in his able and exhaustive treatise on baths, refers as follows to the anointing process:

"Although we can hardly expect to see a renewal of the practice of inunction, either after the bath or between its stages, to the same extent as in ancient times, yet certainly in many cases it might advantageously be revived, both as a part of medical treatment, and as a means of protection against great and sudden exposures to extremes of temperature."

The opinion of Dr. Bell concerning the advantages of a revival of the process of inunction is remarkably sustained by the experience of Dr. William Taylor, surgeon to the Clerkenwell Infirmary, London. In 1850, Dr. Taylor published a small volume entitled "A New and Successful Treatment of Febrile and Other Diseases, through the Medium of the Cutaneous Surface. Illustrated with Cases." This book appears to be rare, the only copy I have seen having been kindly lent to me by Dr. Otis, and some citations from it, I apprehend, may prove as novel as they are interesting. Additional weight may be given to this work by reason of the marked caution of the author, and his reluctance to lay his method of treatment before the public, until its good effects had been demonstrated by long experience. Their importance may be judged from Dr. Taylor's statement, that during the twelve years, from 1837 to 1849, between 200 and 300 cases of fever occurred at the Clerkenwell Infirmary, without a single death in idiopathic cases; whereas in 1836, before his plan of treatment was adopted, twelve patients died of typhus in one month. As early as 1829, Dr. Taylor observed that fever frequently disappeared in cases where workhouse patients also suffering from scabies were treated for the latter disease with the warm bath and the compound sulphur ointment. An alterative with saline medicine administered in these cases had the credit of curing the fever, but at length recovery took place, in a case



locality changes the character of the disease, and the closure of the infected ward for three or four weeks usually restores it to a healthy condition.

Second—In distinction from the above, there is a form of puerperal fever poison with immensely contagious properties, not primarily derived from a miasm, but capable of generating a most fatal disease.

There are two things which may be noted. First, Prof. Lusk, during the entire epidemic, was in the wards two or three hours daily, and yet not a single case in his private practice developed an unfavourable symptom.

Second—Three months later the obstetrical wards of the hospital were occupied by the surgical service, under the charge of Prof. James R. Wood, and in it were treated several cases after capital operations, such as amputations, exsections, etc., and not a single case of pyæmia or septicæmia occurred.

#### *Epidemic Puerperal Fever.*

In the course of some remarks elicited by the preceding paper, Dr. FORDYCE BARKER (*Medical Record*, Oct. 30, 1875) said: "I cannot resist the conviction that the study of the genesis of puerperal fever is the study of a distinct essential disease which attacks puerperal women, and only puerperal women."

"The great practical end in view in the study of the genesis of puerperal fever is, to ascertain what causes of the disease are preventable. A very great advance has been made within a few years in our knowledge of the various agencies which contribute to septic poisoning, and still more striking has been the addition to our resources in the use of antiseptic remedies. Every intelligent obstetrician appreciates, at the present day, as they did not in former periods, the great importance of averting all the predisposing causes of the disease in the patient herself, by an efficient treatment of anæmia and albuminuria in the last periods of pregnancy, a condition which so tends to blood deterioration, and which so favours the absorption of septic poison—by securing to the patient perfect ventilation and good air during labour and the puerperal period, and avoiding the old error of keeping the room too hot, with every crevice closed that will admit air; by preventing delay in labour, in the early resort to the use of the forceps or other resources of our art, when necessary; by effecting the early removal of the placenta by compressing the uterus, thus securing the efficient and permanent contractions of this organ, and thus preventing the retention and decomposition of clots, and the torture and exhaustion of after-pains; by removing immediately after labour all soiled clothes and bedding, and carefully watching that none are ever after permitted to contaminate the patient; by antiseptic washes and injections, to prevent autogenetic poisoning; by good nutrition; and lastly, by guarding the patient against the dangers of infection or contagion through the medium of the nurse or the obstetrician. This is a very rapid and by no means complete exposition of the resources we have at command for averting danger from puerperal fever.

"But there still remain, as great determining causes of this fearful disease, nosocomial malaria and epidemy. How to overcome and to exterminate nosocomial malaria is the great problem which I confidently hope will be solved by the progress of science at no remote period. The devastation which results from this cause, in obstetrical and surgical hospitals, has led some to the extreme folly of questioning the usefulness of hospitals, and others to urge as a radical necessity the extravagantly expensive procedure of pulling down all the old hospitals, and of reconstructing them of such materials that this process can be repeated every few years. But, in the first place, this is not demonstrated to be a radical preventive of the septic diseases which result from nosocomial malaria, for there are well-authenticated reports of puerperal fever in new hospitals for maternity, and of pyæmia and of septicæmia in new surgical hospitals among the first patients received into them. In the second place, I cannot believe that chemical science is so powerless as to fail in finding some means of wholly exterminating this miasm. The experiment has been already successfully tried in this city. I was struck by the remark in the paper of Dr. Lusk, that after the lying-in wards at Bellevue were given up on account of puerperal fever, they were occupied as surgical wards in the service of Dr.



James R. Wood, and that not a single case of septic disease has occurred in them. I am informed by Dr. Dennis, house-surgeon at the present time, that there have been eighteen amputations in patients in these wards, and not a single death. But in some of the surgical wards the fatality from septic disease was really frightful, as reported by the surgeons in attendance; and Prof. Doremus was employed by the Commissioners to disinfect them. I will give his method of procedure, as I wrote it down from his verbal statement to me.

"The purification of the surgical wards in Bellevue Hospital was accomplished during the spring and summer of 1875, by the employment of large volumes of *chlorine* gas.

"This powerful disinfectant was resorted to because all the poisonous emanations from the human system are decomposed by it, and thus rendered inert (carbonic acid gas excepted); also because of its diffusive power. Strips of paper were pasted over the crevices around the windows and doors, before generating the chlorine.

"Two sheets of lead about eight feet long and four feet wide were turned up at their edges and placed on the floor of the ward to be treated.

"In these leaden receptacles several hundred pounds of black oxide of manganese and common salt were placed, to which water was added until the mass, when thoroughly stirred with wooden shovels, had the consistency of a thick mud.

"Bowls, basins, and pitchers of sulphuric acid were placed around the leaden vessels in readiness to be applied to the black mixture. To eliminate all the chlorine, the acid should equal the weight of the salt and manganese combined. Water was then poured over the floor to dampen the wood, and the ward was filled with steam until the moisture condensed on the ceiling and walls. The air of the room was so saturated with partly condensed vapour that we had to grope our way towards the vessels containing the sulphuric acid.

"The several assistants then held said vessels over the mixture of manganese and salt, and at a signal all poured out the acid at the same time; then hastened to the second leaden trough, applied the acid and rushed out of the door to escape inhaling the chlorine gas which was liberated in immense volumes. Since the amount of poisonous gas was so great that it would have proved fatal to any one entering the apartment, the doors were securely fastened to guard against such an accident.

"After the lapse of twenty-four hours, the vessels were again filled with sulphuric acid and placed around the leaden pans. The mixture was then rapidly stirred, and the second application of acid made as in the first instance.

"For these two treatments about a carboy of sulphuric acid (160 lbs.) was employed.

"After a second twenty-four hours' exposure of the ward to this gas, the windows were thrown open, the residuum of sulphate of manganese and sulphate of soda was removed, with the leaden and other vessels, and the walls and floor scrubbed and dried.

"The chlorine was generated by this method, rather than by the addition of hydrochloric acid and manganese, not only because it is cheaper, but because the heat generated by mixing sulphuric acid and water rarefies the gas and facilitates its dissemination through the room and its passage into the porous walls.

"Chlorine is comparatively inefficient unless moisture is present, hence steam was employed as described.

"After one ward had been thus disinfected and ventilated, the same large leaden vessels were taken to an adjoining ward and the process repeated.

"Especial stress is laid on the importance of generating enormous volumes of the chlorine gas, that it may thoroughly permeate the walls. As its odour is very pronounced, persons are liable to err in regard to the quantity, and they merely produce a bad smell and signally fail to destroy the virus with which old or even new walls are at times impregnated.

"The *water-closets* were purified by the use of *ozone*.

"This active form of oxygen was generated by mixing equal weights of manganate of soda and sulphate of magnesia in a dry state, and sprinkling

*This mixture is about the basis of  
night se,*



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**HENRY C. LEA, Philadelphia.**



I have known several instances in which, from the overflow of cess-pools, and sometimes from the deliberate act of indolent and unprincipled domestics, the soil beneath the floor of the kitchen or laundry has become saturated with drain-water. In one instance in which this had occurred, there were two deaths from fever of a typhoid character, and such fevers are of extremely rare occurrence in this vicinity.

It is plainly the duty of the family physician, as occasion offers, to remind those under his charge of this deceitful source of disease, and of the necessity of personal watchfulness over the sanitary condition of their homes.

In this connection it is of interest to note that diphtheria is now prevailing in this immediate vicinity, and has proved very fatal, and that, so far as can be ascertained, it is confined almost entirely to two streets, in which the gutters are notoriously filthy, and that not a case has thus far occurred on the streets in which attention is paid to cleanliness.

#### *Means of rendering Healthy Workshops where Phosphorus is manipulated.*

The Fourth International Medical Congress, held at Brussels in 1875, adopted the following conclusions on this subject, as recommended by the Section on Public Health:—

1. The Section on Public Health proclaims its decision that the employment of red amorphous phosphorus should be substituted for ordinary phosphorus in all match factories.

2. Until the universal adoption of this medical measure it recommends in the process of manipulation, the following measures which are designed to prevent general poisoning and more especially necrosis of the jaw; the establishment of the factories in sufficiently spacious localities; powerful ventilation by means of pipes running along the ground and connecting with a chimney with an upward current; constant attention to cleanliness. By the side of these physical means of preservation arranges itself the employment in the workshops as a chemical antidote of the essence of turpentine.

3. The local symptoms can be relieved by astringent gargles, and above all by the obligation imposed upon manufacturers of not even admitting into their factories workmen in whom a previous examination of the mouth proves that the dental apparatus is affected with penetrating caries, or any other affection of a nature to favour the noxious action of phosphorus vapour.

4. Children ought not to be employed in factories where phosphorus is manipulated.

5. When the authorities permit the establishment of factories where this substance is worked, they should impose these conditions, and see that they are fulfilled, as well in the interest of the workmen as in that of the manufacturers, who are legally responsible for accidents due to their carelessness or to their negligence.—*Gaz. Hebdom.*, Oct. 1, 1875.

#### *Lying-in Hospitals.*

At the general meeting of the International Medical Congress held in Brussels in September last, the following expression of opinion concerning lying-in charities was adopted, as recommended by the Section on Midwifery:—

1. The urgency of radical reform in the system of lying-in relief.

2. Complete abandonment of large lying-in hospitals.

3. The substitution of small houses with separate chambers for lying-in.

4. The establishment in the neighbourhood of the lying-in hospitals of a house of reserve with a separate medical direction, and furniture.

5. As great an extension as possible of aid at the home of pregnant and lying-in women by furnishing every kind of assistance.

6. Lying-in at the homes of midwives at the expense and under the supervision of the management, affords the means of reducing the number of deliveries in lying-in hospitals, and of diminishing the mortality. This measure, which is desirable at all times, becomes a necessity during an epidemic.—*Gaz. Hebdom.*, Oct. 1, 1875.



# THE MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., Editor.

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## DIPHTHERIA IN NEW YORK.

OPINIONS have frequently been expressed in medical circles that the prevalence of diphtheria in this city has been a good deal overestimated by the public, and that the number of fatal cases for the past six or eight months has not been much larger than for similar periods of other years. This view, however, is not sustained by the mortality tables published by the Board of Health. We find, if we consult them, that for thirty-two weeks, dating from and including the week ending the 26th of September, 1874, to and inclusive of the week ending the 1st of May, 1875, the reported mortality from diphtheria has been very much greater than during a like period in 1873-4, and more than four times as great as the average mortality during a like period for the past five years. There is another point that attracts attention, which is that for the past two years the mortality from diphtheria has been remarkably high throughout each entire year. During 1874 the lowest weekly mortality was 14, to which it fell twice, once for the week ending March 28th, and once for the week ending June 13th, the lowest average weekly mortality for the past five years being 5. In September it had reached 22, and then it began to ascend rapidly, and was 42 in October. In November it had reached 65, but fell off again to 41 in December, again rising until 73 was reached for the week ending January 16th, 1875. From this point it again fell off, though it still maintained a high average during February and the first part of March, declining in the latter part of this month to 35. At the end of April the mortality was still 44, as opposed to 24 for the corresponding week of last year, and 10.4 for the average of corresponding weeks for the past five years.

The principal errors in these statistics are due, it is claimed, to the lack of common agreement between physicians as to the application of the terms diphtheria and croup, and the confounding of scarlet fever in

some of its forms with the former. As an instance of this circumstance it is said that in England, when the name diphtheria came into usage, many less cases of membranous croup were reported, though at the same time there was no reason to suppose that the disease itself, as described in the text-books, was any less frequent. As far as this point is concerned it cannot be shown that the recent discussions on the identity or non-identity of diphtheria and membranous croup have affected the statistics adversely for membranous croup. On the contrary, the number of reported deaths from membranous croup has been even larger than usual. Taking the statistics of the thirty-two weeks already spoken of we see that the number of deaths is reported at 531, as compared with 512 for a corresponding term in 1873-4, and 435.2 for the corresponding term averaged for the past five years.

From this record it would appear that the excessive mortality from diphtheria was not due to the inclusion of croup cases among them. With scarlet fever this is perhaps different, for we find that during the thirty-two weeks mentioned the mortality was 409, as contrasted with 749 for the corresponding period in 1873-4, and 623.8 as the average for corresponding periods in the last five years. Here, then, the mortality was considerably less than the average, and notably less than for the preceding year, and it may well be that abortive cases of scarlet fever were assigned to the diphtheria list. Still, even if this allowance be made, and it be assumed that scarlet fever had as many victims during this season as during the preceding one, we still find that the sum of this number added to the reported deaths from membranous croup gives only a total of 1,280, as compared with 2,461, the grand total of the actually reported deaths from the three diseases, thus leaving a balance of 1,181 in favor of diphtheria, against an actually reported sum of 1,521, and a general average mortality for the same period for five years of 393.6. So that, even if all these deductions be made, it would appear that the actual number of deaths from diphtheria has been about three times the average number. There are some other interesting statistics that may be gleaned from these reports. During this period of thirty-two weeks the reported cases of membranous croup fell as low as 4 per week, and never exceeded 29, though they reached that figure twice, and then diphtheria was very high—at 50 and 73. There does not seem to be any constant relation, however, in the rise and fall of the two diseases.

Scarlet fever, as we have before observed, was less frequently reported as a cause of death. The lowest weekly mortality was 3, when diphtheria was 48, and the highest was 20, which was reached on two occasions. As with membranous croup, there was no constant ratio in the mortality of the two diseases.

When we take the sum of the deaths from these three diseases during these thirty-two weeks, we find that there is only an excess of 113 over the same period in 1873-4, though nearly a thousand more than



in the same weeks averaged for the past five years. These facts point unmistakably to a rapid increase in these diseases which truly justifies solicitude on the part of physicians and the public.

What are the noticeable facts in regard to its locality in New York? One thing is pretty certain, viz., that it has prevailed most extensively among the poorer classes and in those particular parts where attention to general sanitary measures has been least observed. This is a valuable point, and if we could only determine whether the proportional number of those attacked, or even of the fatal cases, were greater among the poor, and in association with deficiency in attention to sanitary matters, we should be in the possession of a valuable item of information. Unfortunately this is a problem that we have no means of solving. Where a given area of the city furnishes the largest number of deaths from diphtheria, there also are generally the largest number of families living together, and we should naturally expect, *ceteris paribus*, that at these points there would be the greatest mortality from any disease. As yet we have no means of knowing the actual number of the population to a given area, and therefore can reach no definite results in this direction.

This much may be said, that certain localities appear to favor the disease, whether this is accidental merely or not, for the disease has usually selected particular points in each epidemic, and, starting from them, has moved in a definite direction. The east and west sides of the city have been particularly visited. A glance at the excellent maps which have been devised by the Sanitary Superintendent of the city to illustrate this subject, shows that on the west side especially there has been a special focus of trouble in the district lying between Thirty-ninth and Forty-second Streets, and between Ninth Avenue and the river. This portion of the city is one of the principal centres for slaughter-houses, both for hogs and bullocks, and much of the area is given up to cattle-pens and receiving-yards, all of which are unavoidably offensive in the way the slaughtering business is conducted at present. Many of the population live in cabins on the rocks, where, of course, there is no proper escape for their waste, while about them is a great deal of new-made land. The disease seemed to develop a certain amount of intensity here, and then began to move slowly and somewhat irregularly downwards. On the east side the condition was somewhat similar, except that the focus was not so clearly marked, and its course downwards towards the lower part of the city was even more irregular than on the west side. The central districts of the city have only been invaded at isolated points. There is far less regularity, however, in the spread of diphtheria than of such strongly contagious diseases as small-pox. In the one case, there are comparatively few cases in a single block, and they are often pretty uniformly scattered over a large extent, while in small-pox the cases are often so crowded together that a dozen or more may occur in a single

block within a very short time, while the scattered cases will be exceedingly few.

It may safely be said that diphtheria does not appear to have any connection with the distribution of the old water-courses of the city, but also that a large number of cases have originated without any suspicion of contact with the diseased matter in any form, while in some of these instances sanitary defects of a very serious kind have been found in the dwellings, making it highly probable that noxious emanations and the like have produced the disease. It may possibly be due to the foul emanations from slaughter-houses and other nuisances, or it may arise from some accident or neglect in one's own dwelling, where it was supposed that every sanitary regulation was vigorously enforced. Such might be the explanation of the following interesting case: A prominent physician of this city was suddenly taken ill with diphtheria, and was confined to his room for five days. On recovering, and making a careful inspection of his premises, he found that in some unknown way the soil-pipe carrying the waste from the adjoining houses had burst, letting in upon his cellar floor a collection of rottenness and filth that was of the most disgusting kind. It is difficult always to be able to make a careful examination of the premises in this way, but it seems probable that if each case of diphtheria were carefully investigated, a large number of the so-called idiopathic cases might be traced to some such source. Many similar instances probably occur to the mind of most practitioners, and there seems to be no reason why such influences as these described should not in many cases be causes of diphtheria, just as they may often produce typhoid fever, puerperal fever, and erysipelas—an opinion that is beginning to be very generally held.

DR. J. M. CORNELISON.—At a special meeting of the District Medical Society for the County of Hudson, N. J., held in the rooms of the Young Men's Christian Association, on the 27th of May, the following resolutions were adopted:

*Whereas*, in the ripeness of age our friend and colleague Dr. J. M. Cornelison, first President of our District Society, and one of its charter members, has been summoned from time to eternity, a shock of wheat ready for the sickle; we, prompted by deep sympathy for those who were dear to him by ties of consanguinity, as well as high regard for the memory of the departed, have met together as members of a common profession, to give expression to our feelings upon this sad occasion.

*Resolved*, That in the death of our esteemed friend, whose urbanity and kindness of heart had endeared him to us all, we recognize the hand of Providence, and the march of time; and as we bow in submission to His will, we cannot but give expression to the sadness that fills our hearts at this dispensation.

*Resolved*, That this mournful event has taken from our midst one whose honorable and generous character had won our esteem and the respect of the whole community.

*Resolved*, That a copy of these resolutions be published in the daily papers, MEDICAL RECORD, and Medical and Surgical Reporter.



## CELLARS AND DIPHTHERIA :

TOPOGRAPHICAL OBSERVATIONS OF TWENTY RESIDENCE SITES, IMPARTIALLY SELECTED, IN WHICH DIPHTHERIA HAS OCCURRED, IN THE CITY OF DES MOINES, DURING THE SUMMER OF 1875.

By A. G. FIELD, M.D.,

DES MOINES, IOWA.

IN nine residences, with thirty-eight inmates, an alluvium overlying sand and gravel, with dry cellars beneath, and insufficient side ventilation, there were twenty-two cases and four deaths.

In two residences, with fourteen inmates, on alluvium overlying sand and gravel, with wet cellars and insufficient side ventilation, there were four cases, but no deaths.

Five residences, with twenty-six inmates, on alluvium, clay subsoil, damp cellars, with insufficient side ventilation, there were fourteen cases, and three deaths.

Two residences, with fourteen inmates, on filled ground over alluvium, clay subsoil, wet cellars, with insufficient side ventilation, there were nine cases, and four deaths.

Two residences, ten inmates, on low ground, damp cellar, in alluvium with insufficient side ventilation, there were four cases; no deaths.

A window, or an outside door on the south or west only, from which directions come the prevailing winds, as well as openings through basement walls less in the aggregate than one square inch for one square foot of area, are deemed insufficient for ventilation; and more especially so where a door opening through the floor into the cellar has been in daily use. In four instances there was no outside opening whatever. These

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\* One of these cases—a scirrhus of the rectum—was reported by Dr. Crosby in the Archives of Electrology and Neurology, Vol., No. 1.



loosened; and I slowly worked it sidewise, and in about fifteen minutes the tumor was dislodged and was taken off. The base was then carefully and thoroughly worked up in all directions until all the hard tissues had been destroyed, and the cavity presented a charred appearance. The entire operation lasted nearly an hour. A small arterial branch was ruptured, which was tied by Dr. Crosby. The patient came out of the ether well, and returned home the same afternoon. To my great astonishment he had no irritative fever on the following day, but was able to go about. Much less sloughing than usual followed, and very soon the process of healing began. The complete healing was not accomplished, for up to the middle of March a small scab remained. The wound was dressed by the suggestion of Dr. Crosby, with oakum and carbolized oil.

The tumor was taken for microscopical examination to Dr. Francis Delafield, who gave the following report:

JANUARY 20, 1874.

"The specimen received from you consists of an ovoid piece of skin, in which is a deep ulcer. The walls of this ulcer are formed of granulation tissue, in which are imbedded nests of epidermis cells closely packed. The surrounding skin is infiltrated with groups of small rounded cells, with a few similar nests. This infiltration extends through nearly all the skin removed.

It is probable, therefore, that the removal was not a complete one, but that some portions of the new growth were left behind.

The growth has the usual appearance of epithelial cancer of the face."

The tumor recurred, and I again operated in the same way, although not sanguine of the results, but hoped at least to keep the disease at bay. The operation was more thorough than the first, the needles extending as far as it was safe to do without injuring the temporal artery. It was clear that the disease had attacked the bone, and that however radical might be

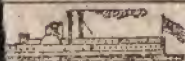


No deaths from cholera were reported in Cincinnati yesterday. The disease appeared at Mount Vernon, in the southwestern corner of Indiana, last Thursday, and there have been thirty deaths from it since. Business is almost suspended in consequence. Six new cases of cholera appeared in the penitentiary at Columbus, Ohio, yesterday, and two of the victims died after a few hours' illness.

One hundred and thirteen deaths from cholera morbus were reported in New York last week. *ends 7.12.73.*



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## TELLIGENCE.

occurred amongst the natives, but nine Europeans were included amongst the victims. No satisfactory reason has yet been assigned for this outbreak. In the plains, the season has, thus far, not been marked by any unusual prevalence of cholera; in Calcutta, although cholera is never entirely absent from the native portion of the town, the European community has enjoyed a marked immunity from it since the construction of the drainage and waterworks.—*Med. Times and Gaz.*, Aug. 28, 1875.

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FOREIGN INT

*Protoplasm and Adipocere.*—A paper was read before the Anatomical and Physiological Section of the British Association for the Advancement of Science, by Dr. J. GOODMAN, on Protoplasm and Adipocere, or the Origin and Ultimate Termination of Animal Structure. The author endeavoured to show that the animal body, with all its complex organs and seemingly dissimilar structures, is formed either of corpuscles or fibrinous material, which alone can be denominated the true protoplasm of the body; and that dead animal matters are capable of resuscitation by contact with



**ABOLISHING CESS-PITS.**—Mr. Kneass, the Chief Engineer and Surveyor, in his annual report for 1866, refers to the necessity of abolishing (gradually) the use of cess-pits or privies—a measure which that officer recommended to the attention of Councils in several of his reports. The Chief, in again calling attention to this important measure, says that the local Registrars in London record the heaviest death rates in districts where the cess-pit is used in preference to the water closet. The operation of cleaning the pits is foul, mischievous and unremunerative, while the loss to the inhabitants in damage to health cannot be estimated; and although streams and rivers may be fouled, yet it is distinctly asserted that the value of human life has been increased in proportion as cess-pits have been abolished and refuse removed in water from the tenements. It is also believed that in many cases, though the cess-pit is condemned by the judgment of the parties, yet the fear of sewer changes are by them more dreaded. Cholera requires fermenting filth, foul air and squalor, and these elements are necessary to grow such disease before they can prevail and become epidemic, and therefore, as compared with privy and cess-pits, the water closet is a vast improvement.

"As to the utilization of sewage," says the Chief Engineer, "there has been much written and many experiments tried, the result of which appears to be that there is no known or tried form of precipitating solid manure that has ever been made to pay in Great Britain. At Edinburgh the system, under peculiarly favorable circumstances, has been more successful than at any other place, and even here, where the distribution by gravity has been substituted by pumping, there has been loss, though the weight raised was but trifling. At Rugby, with a population of about 6000, the drainage is pumped, and is arranged to be distributed for the irrigation of 470 acres. After eleven years of trial the irrigating area has been reduced to 120 acres, and found to be inapplicable to any other crop than grass. In many other towns in England, such as Croydon, Watford, Alnwick and others, the results are the same. It is also decided that if more than 5000 tons of sewage is distributed per annum upon an acre of meadow, there is waste, and the water therefrom will pass off without being purified, and, therefore, with much of the fertilizing proportion of the sewage in solution, still carrying its polluting effect to the streams. If properly applied, there is no better purifier than the meadow soil, from which sewage will flow clarified, free from its deleterious solvents, and can be used without fear or inconvenience.

"The quantity of sewage that is due population is found to be, including rain fall and sub-soil water, 100 tons per head per annum, or 60 tons exclusive of storm water; therefore it would require the excretal and other matters of 50 individuals to supply the requisite quantity for one acre, or for the city of Philadelphia, with an estimated population of 800,000, an area of about 16,000 acres. It would be difficult to apply this irrigating system for the entire section of our city lying between the rivers without enormous expense, as the area of meadow in what is termed "the Neck" is but about 5000 acres, sufficient only for the sewage of a population of 250,000 souls, while but a portion of this could be reserved for such purposes, so rapidly are improvements advancing in that direction; in fact, that entire area may be entirely occupied for commercial and manufacturing purposes before the necessities of the city require the resort to such or a similar project. For that portion of the city lying west of the river, it may be found feasible to make use of the extensive meadows between the river and Darby creek, which would be well adapted to the purposes, and throw the surplus of drainage into the Delaware by that creek; and when, in the future, the time should arrive that an expenditure of \$30,000,000 would be considered as a necessity, as of late in London, these meadows and this creek will be found of great importance in devising a general plan for such expenditure."

The Engineer, in concluding his report upon this subject, refers to the offal from slaughter houses, and says that something should be done at once to get rid of the nuisances engendered by them. The report states "that there are but few of our sewers that are not horribly polluted with the refuse of those establishments, and our river gives evidence that some arrangement ought to be made by which we should be relieved, at least, from those nuisances which are repulsive both to smell and sight. Our sister cities are advancing in these particulars more rapidly than we are, as they have already at Chicago and New York authorized abattoirs, on general slaughter houses, whereby the city is relieved from all these annoyances, and if properly managed insured healthy flesh for the market."



the door on the  
 Washington avenue  
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 Arrangements.  
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**INSTRUMENTAL**  
**MATEURS,**  
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 an. 8, 1867.  
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**OSE BALL TO-**  
 uard Hall. \*385  
**ANNIVERSARY**  
 No. 13. American  
**NESDAY EVEN-**  
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**ABE, A. Sec'y.**

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**RAL SCIENCES**  
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**LL TO-NIGHT.**  
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**NERAL MEET-**  
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**'S RELIEF AS-**  
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**MITH.**  
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**T AT MUSI-**  
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**NEFIT OF ST.**  
 ue open until  
 . \*209

**TATES' BALL**  
 o'clock P. M.,  
 \*281

and Coal Co. of Ohio, No. 32  
 Philadelphia.—The annual meetin  
 holders will be held at the Office of  
**MONDAY, January 7th, 1867, at 3**  
**1t\*** **EDWIN H. C**

**AN ADJOURNED MEET**  
 Stockholders of the Black H  
 pany will be held at their Office, No  
 on **TUESDAY, January 8, 1867, at 12**  
 report of the Committee appointed  
 meeting to examine into the situat  
 pany. **GEORGE**  
**7-2t\***

**THE ANNUAL MEET**  
 Stockholders of the St. Nich  
 pany will be held at their Office,  
 Philadelphia, on **TUESDAY, the**  
 at 12 o'clock, at which time an electi  
 to serve for the ensuing year will be  
**OHAS. F.**  
 Secretary a  
**7-8t§**

**OFFICE OF THE ROYA**  
 32 Merchants' Exchange, t  
 Annual Meeting of the Stockhold-  
 Company will be held at their office  
**ROW (TUESDAY), January 8th, 18**  
 M., when Directors will be elected  
 year. **GEO. L. POO**  
 Phila., Dec. 28, 1866.

**OFFICE OF THE TAR**  
 Farm Oil Company, 228 Doc  
 delphia, January 4, 1867.—An Ad  
 Meeting of the Stockholders of thi  
 be held at the Office of the Compa  
**DAY, the 10th instant, at 12 M.** As  
 portance will come before the me  
 sirable there should be a full attend

**THE ANNUAL MEET**  
 Stockholders of the Eagle Sp  
 fining Company will be held on MO  
 14, 1867, at 3 o'clock P. M., at 401  
 N. E. corner Third and Callowhill.  
**7-7t\*** **C. G. DEMPS**

**THE ANNUAL MEET**  
 Stockholders of the Hosmer C  
 be held on **TUESDAY, Jan. 8th, 18**  
 the office of the Commercial List, 24  
**7-2t\*** **HENRY BUD**

**OFFICE JAS. BISHOP & C**  
 street, New York, December  
 is hereby given to the Stockholder  
 Beater Press Company, that there  
 ing of the Stockholders of said C  
 American Hotel, Jersey City, ON  
 January 16, 1867, at 12 o'clock, for  
 voting upon the questions of reduc  
 stock of said company, increasing its  
 ital, and assessing the stock for this  
**7-10t§** **JAMES BIS**

**NOTICE.—A MEETING OF**  
 holders of the United States  
 Loan Association will be held at the  
 perance Hall, South Second street, be  
**MONDAY EVENING, Jan. 7th, 1867**  
 First instalment of \$1 on each share  
 to be loaned. **THOS. SINGLE**  
**WM. CARLEY, Sec'y.**

**THE FIRST STATED**  
 the Emlen Building and Lo  
 will be held at Temperance Hall, Y  
 Frankford road, on **TUESDAY EV**  
 8th, at 7 o'clock, to receive first in  
 officers, and loan the funds.  
**JNO. BOARDMAN, Presid**  
**B. J. BITTER, Secretary pro tem.**

**MERCANTILE LIBRARY**  
 PHILADELPHIA, J  
 The annual meeting of the Stock  
 Mercantile Library Co. will be held  
 January 15th, at 8 o'clock P. M. A  
 the Annual Report of the Board of  
 be presented, and nominations of  
 ensuing year will be made.  
**JOHN A. MCA**  
**ja7-tja15§**

**A REGULAR STATED**  
 Post No. 2, G. A. of R., will  
 Head-quarters, No. 505 Chesnut stre  
 day) **EVENING, at 7½ o'clock.** By  
**D. W. WYLIE MITCHELL, Post**  
**J. B. ALLEN, Post Adjutant.**

**GRAND ARMY OF TH**  
 Post 5.—Comrades will meet T  
**EVENING, January 7th, 1867, at 7½**  
 Good Intent Engine House, Allen  
 Frankford road. Business of imp  
 transacted. \*118 **JACOB M.**

**BIRNEY ZOUAVES, TW**  
 Regiment Penna. Vols.—The  
 meet at the usual place **THIS (Mond**  
 at 7½ o'clock. Business of importan  
 By order of  
**\*336** **JOHN F. GLEN**

**SOLDIERS OF THE WAR O**  
 celebrate **TUESDAY, 8th of Ja**  
 M., at the Supreme Court Room. F  
 requested. **7-2t§** **JOHN H. FRIC**

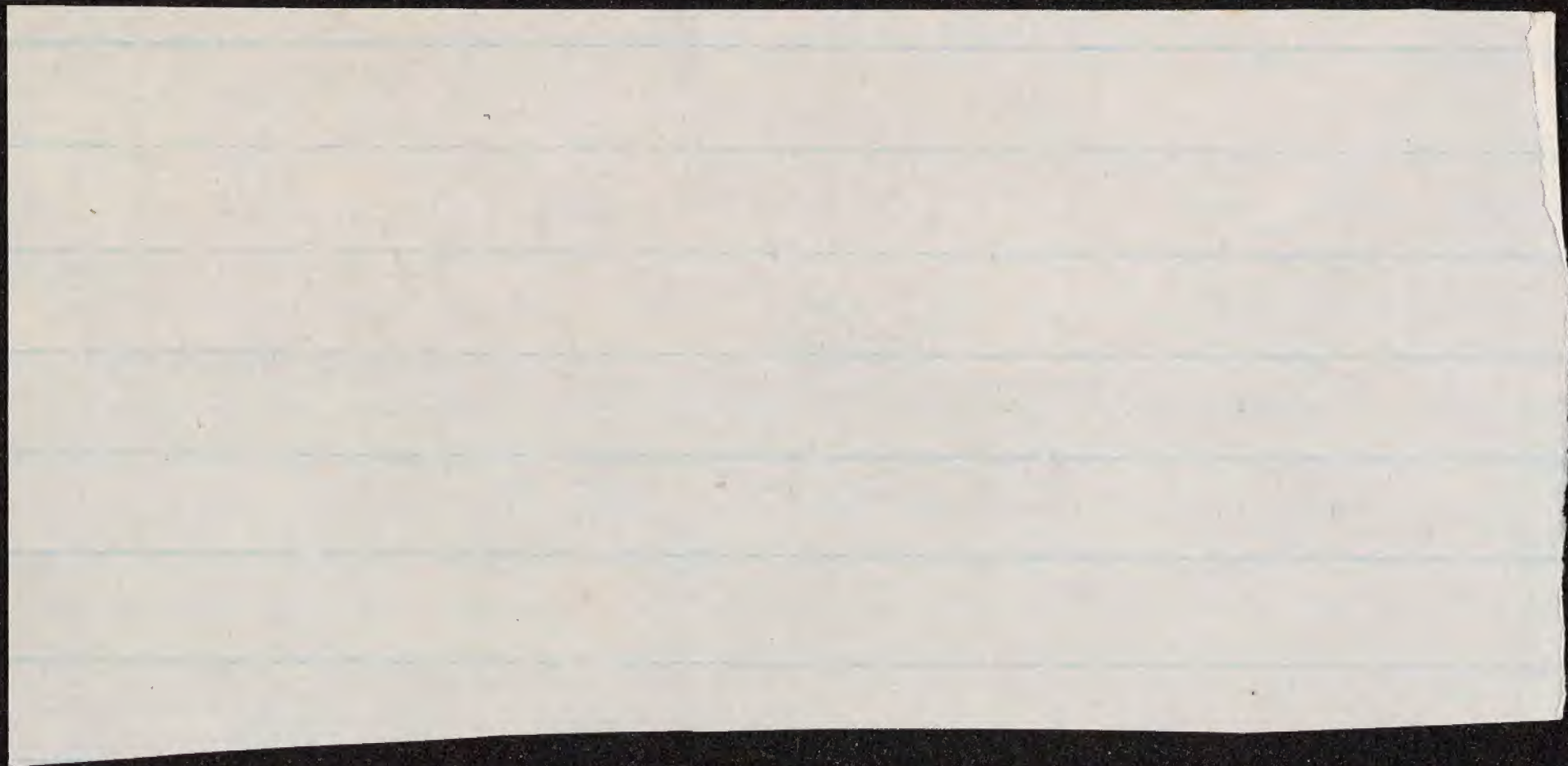
**IMPORTANT TO TAX-P**  
 PARTMENT OF THE RECEIVER O  
 ladelphia, January 4, 1867.  
 All Taxes remaining unpaid subse  
 15th inst. will be placed in the hands e  
 Tax Collectors, upon which the penal  
 will be added. **CHARLES C**  
**7-2t§** **Receive**

**DEPARTMENT OF PUBLIC I**  
 Office of Chief Commissioner, F  
 side, below Chesnut. Philadelphia,  
 Notice is hereby given that the annua  
 now due the city are payable at t  
 five per cent.) until April 1st, 1867.  
 from 9 o'clock A. M. until 3 o'clock



Since 1847, all houses  
in London have <sup>been</sup> compulsorily connected  
with the sewers —







One other subject only remains to be noticed in connection with the arrangements of our model city, and that is the mode of the disposal of the dead. The questions of cremation and of burial in the earth have been considered, and there are some who advocate cremation. For various reasons the process of burial is still retained: firstly, because the cremation process is open to serious medico-legal objections; secondly, because, by the complete resolution of the body into its elementary and inodorous gases in the cremation furnace, that intervening chemical link between the organic and inorganic worlds, the ammonia, is destroyed, and the economy of nature is thereby dangerously disturbed; thirdly, because the natural tendencies of the people lead them still to the earth, as the most fitting resting-place into which, when lifeless, they should be drawn.

Thus the cemetery holds its place in our city, but in a form much modified from the ordinary cemetery. The burial-ground is artificially made of a fine carboniferous earth. Vegetation of rapid growth is cultivated over it. The dead are placed in the earth from the bier, either in basket-work, or simply in the shroud; and the monumental slab, instead of being set over or at the head or foot of a raised grave, is placed in a spacious covered hall or temple, and records simply the fact that the person commemorated was recommitted to earth in those grounds. In a few months, indeed, no monument would indicate the remains of any dead. In that rapidly-resolving soil the transformation of dust into dust is too perfect to leave a trace of residuum. The



The water, derived from the west of the city, is unpolluted by sewage or other refuse, is carefully filtered, is tested twice daily, and if found unsatisfactory is supplied through a reserve tank, in which it can be made to undergo further purification. It is carried through the city everywhere by iron pipes. Leaden pipes are forbidden.

In the sanitary establishment are disinfecting rooms, a mortuary, and ambulances for the conveyance of persons suffering from contagious disease. These are at all times open to the use of the public, subject to the few and simple rules of the management.

The gas, like the water, is submitted to regular analysis by the staff of the sanitary officer, and any fault he may detect which indicates a departure from the standard of purity framed by the Municipal Council is immediately remedied, both gas and water being exclusively under the control of the local authority.

The inspectors of the sanitary officer have under them a body of scavengers. These each day, in the early morning, pass through the various districts allotted to them, and remove all refuse in closed vans. Every portion of manure from stables, streets and yards, is in this way removed daily and transported to the city farms for utilization.

Two additional conveniences are supplied by the sanitary scientific work of this establishment. From steam-works steam is condensed, and a large supply of distilled water is obtained and preserved in a separate tank. This is conveyed by a small main into the city, and



doubt, the chief joy of his life is that he is the "most original and accomplished etcher now alive in Great Britain."

The coffins advocated by Mr. Haden are to be of wicker; made with a strong, pliant osier,—a double thread being preferable,—with as wide meshes as is consistent with holding the flowers, ferns, mosses, evergreens, etc., in which the body is to be laid. In order to facilitate the recognition of the bones if it should ever happen to be desirable, an engraved leaden band is to be tied around the wrists, a second around the legs, and a third passed through the chest.

The procedures when death has occurred are as follows:

"As soon after death as may be, the body is to be sponged, the eyes are to be closed, the chin supported, the limbs composed, and the hands crossed upon the breast. Superfluous bedclothes, together with the impediments and rejectments of the sick-room, are to be removed, and a window is to be opened a few inches both at the top and at the bottom. The papers of the deceased may then be examined, and, if these contain nothing to forbid it, the first preparations for the funeral may be made in the following way. As part of the ordinary stock-in-trade of every turner, brush-maker, or basket-maker, will be found, nested one within the other, and of every form and dimensions, the necessary covering or coffin; at every herbalist's or florist's, its garniture. Both, being light and portable, may be delivered at the house in an hour or two, and the body may be at once laid in it and strewn (except the face and hands, which should be left exposed) with its evergreen covering. All this may be done by the nurses or older servants or members of the family, and no stranger need be admitted. There is now ample time to consider arrangements, for the visit of the physician or surgeon charged to verify the fact of death, to telegraph to friends, and to make final preparations for the interment. The morrow come, and everything prepared inside and out, the necessary agents for the interment will enter the house for the first time and the last, and remove the body in a suitable carriage, either by railway or by water, to its resting-place outside the city, one of the male representatives of the family in every case accompanying it. There will be no procession through the streets,—no opportunity for display,—nothing to elicit either the sympathy or the criticism of the neighborhood (both on such an occasion equally out of place); but, arrived at the cemetery, the body will wait in the mortuary chapel attached to it, with those who are to be present at its interment. These, having been informed of the death, will go and return as their desire, affections, or respect for the dead impel them. The assembly will be in the chapel, and at the grave-side only, where the mourners, men and women (for, since there is to be no public display, both may go), will find the trellissed coffin on its bier, garnished and beautified by

loving hands, awaiting them. Not a word of our burial service will be omitted, though more may be said in the chapel and less at the grave-side, and then all will be over. There will be no reunion at the house of death. The conventional feast will not be spread. The formal reading of the will will be at the office of the legal adviser of the family on a day appointed for the purpose; and the inmates of the house of mourning will return to it and be allowed to remain undisturbed. Next day every one will to his business."

The care of Mr. Haden does not stop with the burial. Where there is a deep, loamy soil, with a gravel substratum, natural grave-yards may be employed, but in most large cities he thinks artificial cemeteries are to be preferred. A series of experiments should first be made to determine what form of soil will most facilitate rapid decay. It will probably be found that an earth composed of fine carbon soil, sand, and lime, is the best; but, whatever compound is decided upon, an artificial soil of about twelve feet in depth forms a basis of this model grave-yard.

So far as this country is concerned, the artificial cemetery is certainly an absurdity,—the expense of making it and the comparative cheapness of land being insuperable objections. Mr. Haden's coffins may possibly come into use; certainly his method is better than cremation, in that it is not only less expensive, but is infinitely less repulsive to the overpowering instincts generated in the Anglo-Saxon breast by custom and teaching immemorial.

Indeed, prejudice is so strong, class interests so powerful, that had not Mr. Haden unexpectedly secured the eager aid and patronage of the Duke of Sutherland, his propositions would have been, even for England, as wild beating of the air as have been all the efforts to introduce cremation.

The duke appears to be an enthusiastic amateur philanthropist, and, being placed above absolute want by his inherited estates and by his marriage, has plenty of leisure for whatever he undertakes. Moreover, as he holds by his own right in the county of Sutherland 1,176,343 acres of land, and in the name of his wife 149,879 acres in the adjoining county of Ross, he is not without influence in a country like England, "in which the possession of land gives a factitious importance even to the humblest and poorest possessor such as no amount of stocks and shares and bankers' balances can ever give." On the 17th and 19th of June the duke gave what may be termed coffin receptions at Stafford House. All London was invited, and all London was there,—some to see the duke set in a framework of coffins, some to see Stafford House, some to see the crowd, and a

*few to see the coffins.*



fessors are Drs. Lynch, Erich, Brown, Latimer, E. L. Howard, Atkinson, Friedenwald, Bevan, Opie, and Goolrick. The other hospitals of the city are, Hebrew, St. Agnes's, St. Joseph's, Church Home, Union Protestant Infirmary, Bayview Asylum, and Mount Hope.

We have ten dispensaries, which do much good and much harm. It is impossible to prevent persons able to pay for medical services from receiving aid from our charitable institutions; and, like all other cities, we are educating a class of permanent paupers.

Some time since, I wrote that our city enjoyed the blessings of the night-cart. I am happy to say that the above statement is no longer true. The firmness of the mayor and our efficient commissioner of health, Dr. James Stewart, has given us what we never had before,—a summer free from the noise and stink of the sink-cleaning brigade. The odorless apparatus has free control, and gives general satisfaction to the citizens. Our city council showed its appreciation of the voting capability of the night-force by repealing the ordinance which gave us relief; but the mayor vetoed it. Our council deserves no credit for enacting this ordinance, as it was done under compulsion. Baltimore County was tired of the nuisance, and gave the city notice that unless it was stopped injunctions would be applied for. So, for a few months at least, we are free.

Yours, etc.,

MEDICUS.

## PROCEEDINGS OF SOCIETIES.

### PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, MAY 27, 1875.

THE PRESIDENT, DR. WM. PEPPER, in the chair.

*Kidney from a case of hæmaturia in an infant.*

DR. JOS. G. RICHARDSON presented the specimen, showing a curious natural injection of both the convoluted and straight portions of the uriniferous tubules with blood-casts, and remarked that the organ had been sent to him by Dr. M. B. Wright, of Cincinnati, Ohio, for microscopical examination; the case being one in which supposed pigment-flakes were found in the urine, and, he believed, also in the blood.

Dr. Wright was preparing a paper in relation to a series of these cases which had occurred in his hospital wards, for the forthcoming volume of the Transactions of the American Medical Association, but had kindly permitted the exhibition of this specimen, and furnished the following brief history of this and similar examples of the disease:

"In three or four days, or longer, after birth, a dingy appearance of the (child's) surface is observed. A curdy exudation is scattered over the mouth, the urine becomes dark, and soon a black sediment, in more or less quantity, is observed on the napkins. Some of the little patients have died within twenty-four hours, others have lived several days, and a few have recovered. The urine has been carefully examined chemically, with negative results merely."

Dr. RICHARDSON exhibited under the microscope a thin section cut in the axis of one of the pyramids of

5. The reaction is almost always moderately acid; very rarely neutral; for if not acid it has usually a marked tendency to alkalinity.

6. The specific gravity of the first urine averaged 1010.5.

7. The specific gravity during the entire ten days varied from 1002.7 to 1010.0.

8. In the urine of each of the children albumen was noticed upon one or more days.

9. Chlorides were found in all the evacuations.

10. The average amount of urea was 0.321 per cent.

11. Uric acid was constantly present in the first urine, and increased in quantity until the third day, when a diminution took place.

12. Under the microscope, the urine of the first day and that of the following days until the fourth was found to contain epithelium from the urinary tract in large amount, varying quantities of epithelium from the uriniferous tubules, and masses of uric acid crystals.

W. A.

LEAD COLIC TREATED BY LARGE ENEMATA OF WATER.—Dr. Reiland gives the following case in the *Berliner Klinische Wochenschrift*, No. 21, 1875. He was called to see a man 50 years of age, whose occupation had exposed him for some years to lead-fumes. The patient had suffered for some weeks from pain in the abdomen, with obstinate constipation, accompanied during the few previous days by occasional vomiting. Enemata of various kinds which had formerly emptied the bowels had latterly failed to give relief; ol. ricini in large doses had also been unavailing. The condition of the patient at the time Dr. R. first saw him was almost that of collapse, with frequent general spasm and muscular contractions, particularly of the arms and legs; accompanied by retching and vomiting of bilious matters. His face was pale, grayish-white in color, a distinct lead line could be seen on the gums, the tongue was foul. The abdomen was hard, tense, and somewhat retracted; pain extending to the small of the back, the testicles, and the thighs. Pulse 65, small. Temperature normal. The patient was ordered the following:

R. Ol. croton., gtt. iii.

Ft. in pil. no. xv.

Sig.—Two every half-hour.

In addition, opium in half-grain doses every two hours. In the afternoon, in spite of having taken all the pills and four doses of opium, no relief had been obtained. It was then decided to use large enemata, and for this purpose an irrigator was made use of which would contain about a litre (two pints), having attached to it a yard of rubber tubing and a nozzle of hard rubber.

The irrigator was filled with lukewarm water, the patient took the knee-elbow position, and the nozzle was introduced a finger's-length into the rectum. When the irrigator was raised, the water passed into the intestine in a continual stream; before the irrigator was empty, more water was added, until four and a half litres had been introduced. The patient complained of severe pain, and the injection was then stopped. A few moments after, a partial stool was obtained; then further enemata were given, and the bowels were thoroughly emptied. This procedure was repeated daily for several days, by which time all pain, etc., had disappeared, and the stools were normal. X.

FOREIGN BODY IN THE RECTUM.—Dr. Greinblatt communicates the following case to the *Wiener Med. Presse*, June 20.

He was consulted by a man who gave the following history. Four days previously he had indulged in an unusually large meal without suffering any immediate evil results. Forty-eight hours later, however, he was seized with pain in the stomach; a day later, difficulty



General

natural circle of transmutation is harmlessly completed, and the economy of nature conserved.

RESULTS.

Omitting, necessarily, many minor but yet important details, I close the description of the imaginary health city. I have yet to indicate what are the results that might be fairly predicted in respect to the disease and mortality presented under the conditions specified.

Two kinds of observation guide me in this essay : one derived from statistical and sanitary work, the other from experience, extended now over thirty years, of disease, its phenomena, its origins, its causes, its terminations.

I infer, then, that in our model city certain forms of disease would find no possible home, or, at the worst, a home so transient as not to affect the mortality in any serious degree. The infantile diseases, infantile and remittent fevers, convulsions, diarrhoea, croup, marasmus, dysentery, would, I calculate, be almost unknown. Typhus and typhoid fevers and cholera could not, I believe, exist in the city except temporarily and by pure accident ; small-pox would be kept under entire control ; puerperal fever and hospital fever would probably cease altogether ; rheumatic fever, induced by residence in damp houses, and the heart disease subsequent upon it, would be removed ; death from privation and from puerpera and scurvy would certainly cease ; delirium tremens, liver disease, alcoholic phthisis, alcoholic degeneration of kidney, and all the varied forms of paralysis, insanity, and other affections due to alcohol, would be completely effaced. The parasitic diseases, arising from the introduction into the body, through food, of the larvæ of the entozoa, would cease, and that large class of deaths from pulmonary consumption, induced in less favored cities by exposure to impure air and badly ventilated rooms, would, I believe, be reduced, so as to bring down the mortality of this signally fatal malady one-third at least.

Some diseases, pre-eminently those which arise from uncontrollable causes, from sudden fluctuations of temperature, electrical storms, and similar great variations of nature, would remain as active as ever ; and pneumonia, bronchitis, congestion of the lungs, and summer cholera would still hold their sway. Cancer, also, and allied constitutional diseases of strong hereditary character, would yet, as far as we can see, prevail. I fear, moreover, it must be admitted that two or three of the epidemic diseases, notably scarlet fever, measles, and whooping-cough, would assert themselves, and, though limited in their diffusion by the sanitary provisions for arresting their progress, would claim a considerable number of victims.

With these facts clearly in view, I must be careful not to claim for my model city more than it deserves ; but calculating the mortality which would be saved, and comparing the result with the mortality which now prevails in the most favored of our large English towns, I conclude that an average mortality of eight per thousand would be the maximum in the first generation living under this salutary régime. That in a succeeding generation Mr. Chadwick's estimate of a possible mortality of five per thousand would be realized, I have no reasonable



doubt, since the almost unrecognized though potent influence of heredity in disease would immediately lessen in intensity, and the healthier parents would bring forth the healthier offspring.

As my voice ceases to dwell on this theme of a yet unknown city of health, do not, I pray you, wake, as from a mere dream. The details of the city exist. They have been worked out by those pioneers of sanitary science, so many of whom surround me to-day, and specially by him whose hopeful thought has suggested my design. I am, therefore, but as a draughtsman, who, knowing somewhat your desires and aspirations, have drawn a plan, which you in your wisdom can modify, improve, perfect. In this I know we are of one mind, that though the ideal we all of us hold be never reached during our lives, we shall continue to work successfully for its realization. Utopia itself is but another word for time; and some day the masses who now heed us not, or smile incredulously at our proceedings, will awake to our conceptions. Then our knowledge, like light rapidly conveyed from one torch to another, will bury us in its brightness.

By swift degrees the love of Nature works,  
And warms the bosom, till at last, sublim'd  
To rapture and enthusiastic heat,  
We feel the present Deity, and taste  
The joy of God to see a happy world!

[*Nature.*

—O—

**Tea and coffee**, strange to say, represent in an absolute way the standard of prosperity of a country. It may be interesting then to ascertain what is our position as consumers of tea and coffee. There is a statistician who has compiled exactly such truths for us, showing the proportions of the consumption of tea and coffee per head of population in Europe. The table is an uncommonly eloquent one. Belgium consumes the most— $16\frac{7}{8}$  pounds per head, and Russia 1.32 pounds. Great Britain uses  $6\frac{1}{2}$  pounds per head; France  $4\frac{5}{8}$ , Italy  $1\frac{3}{4}$ , and Spain but one-quarter of a pound for each individual. This shows almost at a glance, that those countries where industry is the most thriving consume the most tea and coffee.

By our own estimates of consumption, taking our population to be 44,000,000, we use  $4\frac{5}{8}$  pounds of coffee, and  $1\frac{3}{8}$  pounds of tea, as a yearly allowance for every man, woman and child in the United States. We are about on a par with the Netherlands as tea consumers.

Looking, then, at the immense advantages to be derived from these mild stimulants (and some kind of a stimulant is a necessity of human life), may we not dread any financial measure which may force our people to seek other substances, and supplant with alcohol our tea and coffee?

Such questions are grave ones, and are worthy of the attention not only of our manufacturers, but of the workmen themselves. Better defer those happy times of specie payment (and there are no stronger advocates of the hard dollar to be found than ourselves), than force upon a people the alternative of either abandoning their tea and coffee, or taking to those deleterious stimulants which are the bane and ruin of our country.—*Manufacturers' Trade Journal.*



1)  
Answers by Benjamin Lee.

1. "What is the now prevailing judg-  
ment amongst the practitioners of Phil-  
adelphia as to the use of animal  
vaccine virus instead of that which  
has been humanized?"

Answer. The Philadelphia Co. Medi-  
cal Society may fairly be consid-  
ered a representative body, embra-  
cing as it does, members from all  
sections of the city, and from  
both the great schools. The mem-  
bers in most constant attendance  
are active practitioners, and  
they express their opinions with  
liberal freedom on all questions  
of a directly practical nature.  
At the time when a discussion  
took place in the Spring of 1872  
in consequence of the introduction  
of a paper on the subject of "Vir-  
gin Vaccine Lymph and Lymph  
of the Early Removers" the almost  
universal judgment of the Society  
was that there was no occasion



1. The first thing I noticed  
when I stepped out of the car  
was a warm blanket of  
sun on my face. The air  
was thick with the scent of  
fresh grass and blooming  
flowers. It felt like I had  
stepped into a new world.

2. The second thing I noticed  
was the sound of the birds.  
They were singing a sweet  
melody that filled the air.  
It was a sound I had never  
heard before. The birds were  
everywhere, from the trees to  
the bushes. They seemed to  
be celebrating my arrival.  
The third thing I noticed  
was the smell of the earth.  
It was a rich, dark smell  
that made me feel like I  
was standing on top of the  
world. The earth was so  
alive, so full of life. It was  
a smell that I would never  
forget. The fourth thing I  
noticed was the color of the  
sky. It was a deep, vibrant  
blue that made me feel like  
I was looking up at a giant  
canvas. The sky was so  
beautiful, so perfect. It was  
a color that I had never  
seen before. The fifth thing  
I noticed was the feeling of  
peace. It was a deep, calm  
feeling that made me feel like  
I was finally home. The  
peace was so strong, so  
powerful. It was a feeling  
that I would never forget.

3. The sixth thing I noticed  
was the sound of the water.  
It was a gentle, soothing  
sound that made me feel like  
I was standing on a beach.  
The water was so clear, so  
pure. It was a sound that  
I had never heard before.  
The seventh thing I noticed  
was the feeling of joy. It was  
a bright, happy feeling that  
made me feel like I was  
standing on a cloud. The joy  
was so strong, so powerful. It  
was a feeling that I would  
never forget.



for a return to the original source; that all that was needed to ensure success was care in the selection of cases from which to take lymph or crusts, and a <sup>care</sup> in the performance of the operation; that animal virus was less sure in its effects, <sup>than humanized</sup> and more likely to produce serious results locally and constitutionally. Those who maintained a different opinion were few in number, but generally of considerable experience and close observers. It must be remembered that much of the animal virus used at that time by the profession of this city, was imported from Europe, and consequently had deteriorated by age. Within a few weeks I have had an opportunity of distributing a number of fresh quills of undoubtedly pure bovine lymph at the Society. The eagerness with which they were taken leads me to think that there is a readiness on the part of many







3)

To reconsider their verdict, but  
I have no doubt that a large  
majority would still express them-  
selves adversely to its introduction.



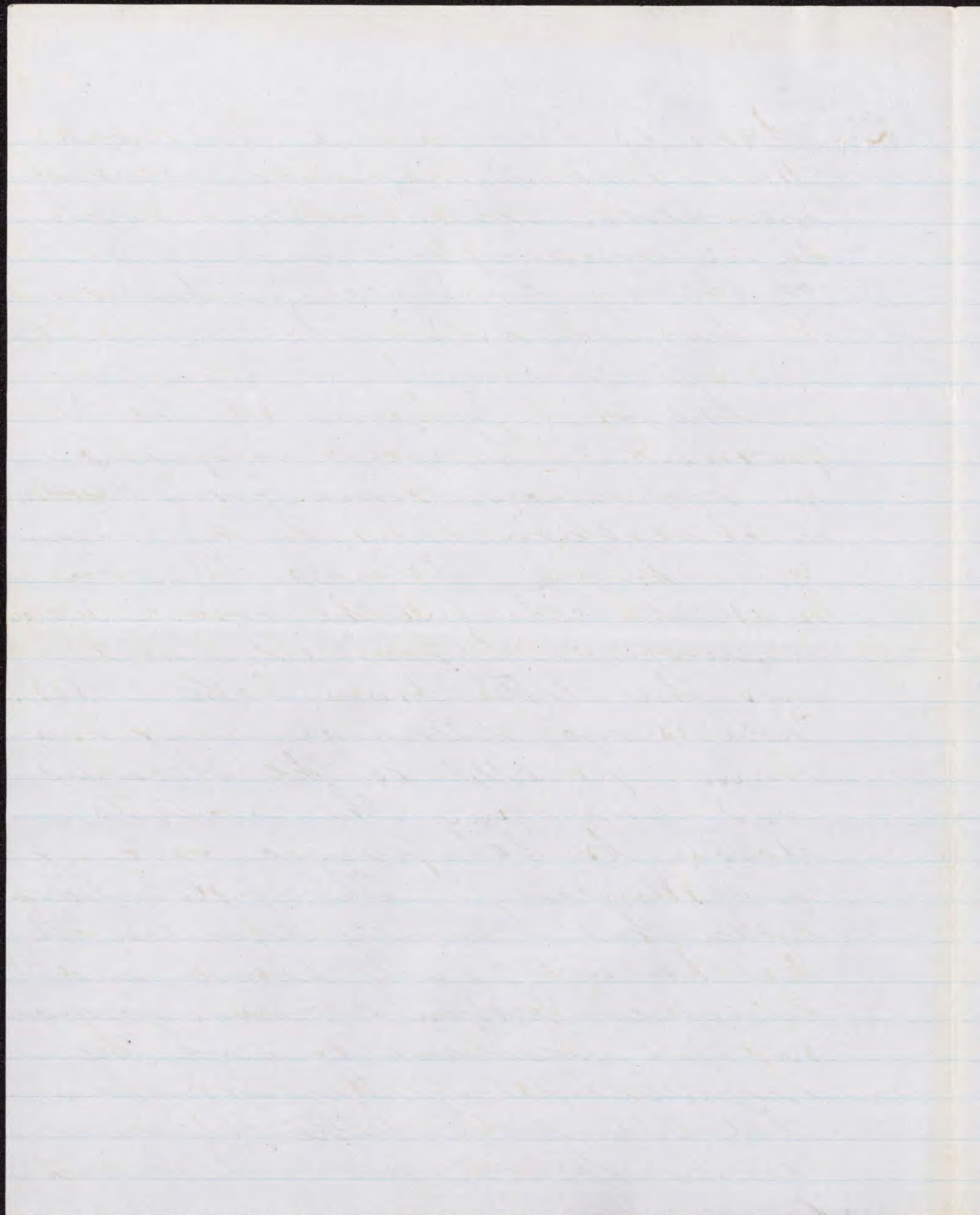
D. B. Lee  
or  
Animal Vaccine Virus  
in Philada.  
1876



2. How do the sewers of East and West Philadelphia now discharge themselves; immediately opposite to the crowded parts of the city, or at any distance farther down the two rivers?"

Answer. Inquiry at the Department of Searveys confirms the impression derived from personal observation that each main sewer trunk delivers its contents directly into the river, whether Delaware or Schuylkill, and into the latter from both sides. There is no discharge sewer running parallel to the streams and conveying the contents down to be poured out at a distance. The whole sewer system has been constructed at hap-hazard; each district, and there are thirteen of them, arranging its drainage to suit the requirements of its particular locality with little reference to the development of a grand







5)  
harmonious plan. The mouths of the sewers discharge at the ends of the bulkheads and at as great an elevation as possible in order to secure a constant flow. It is questionable whether what is gained by constant flow is not more than counterbalanced by the contamination of the atmosphere. This ~~gives~~ problem of the direct discharge of the sewage must be met and that at no very distant day.

Its only solution consists in the construction of large discharging bunks running the whole length of the city's fronts, on the Delaware and on both sides of the Schuylkill, and emptying far down on the neck. Two sewers open directly into Fairmount Dam. One at Girard Avenue - The other in the shape of a creek the receptacle of smaller sewers and of much surface sewage at the Falls of the Schuylkill.



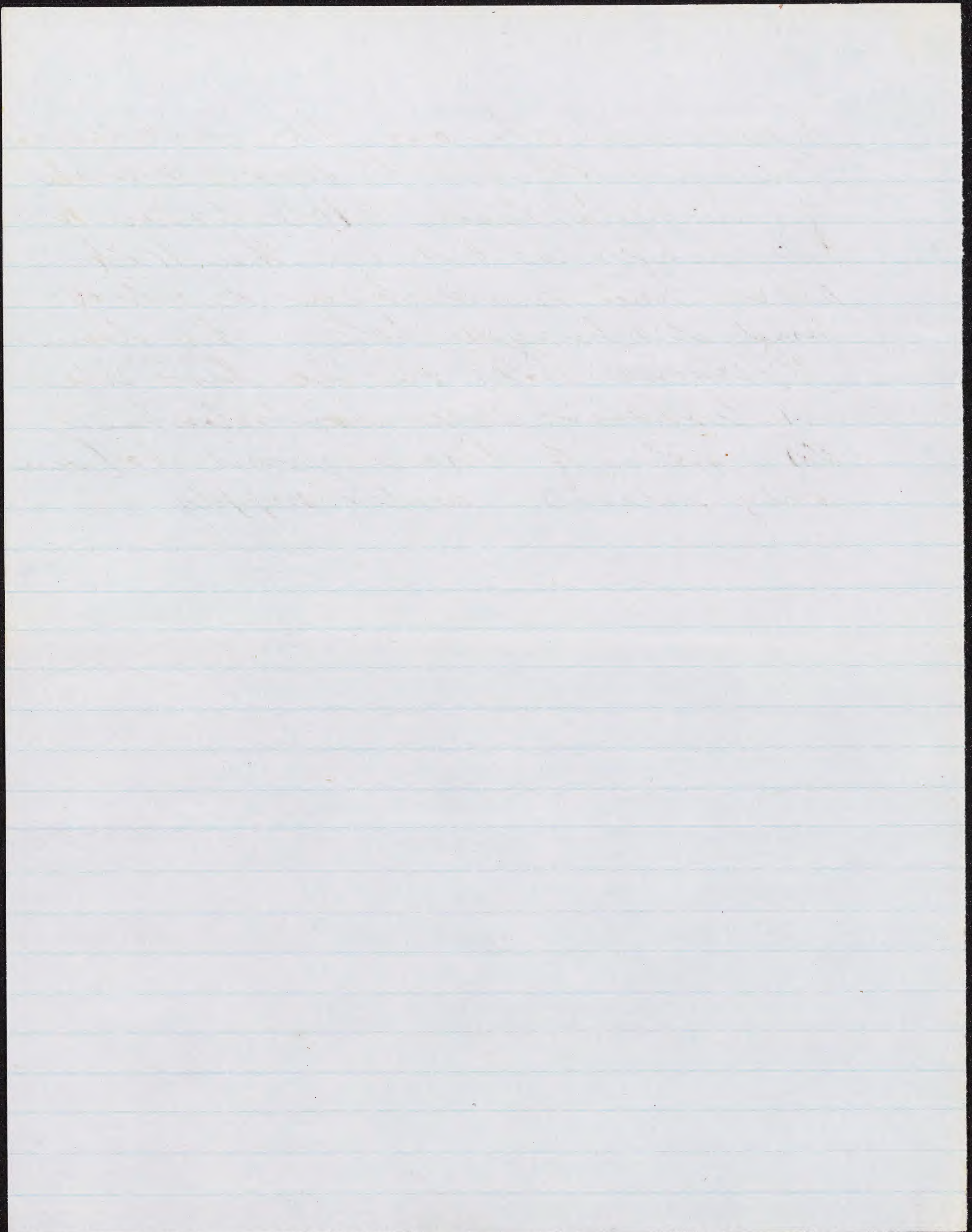




6)

These are both on the East side  
The very offensive sewer which  
formerly opened close down to  
the water works on the West  
side, has now been diverted  
and discharges below the dam.  
Belmont inlet on the ~~West~~<sup>same</sup> side  
is however still contributing  
its quota of disease germs to our  
only reliable water supply.



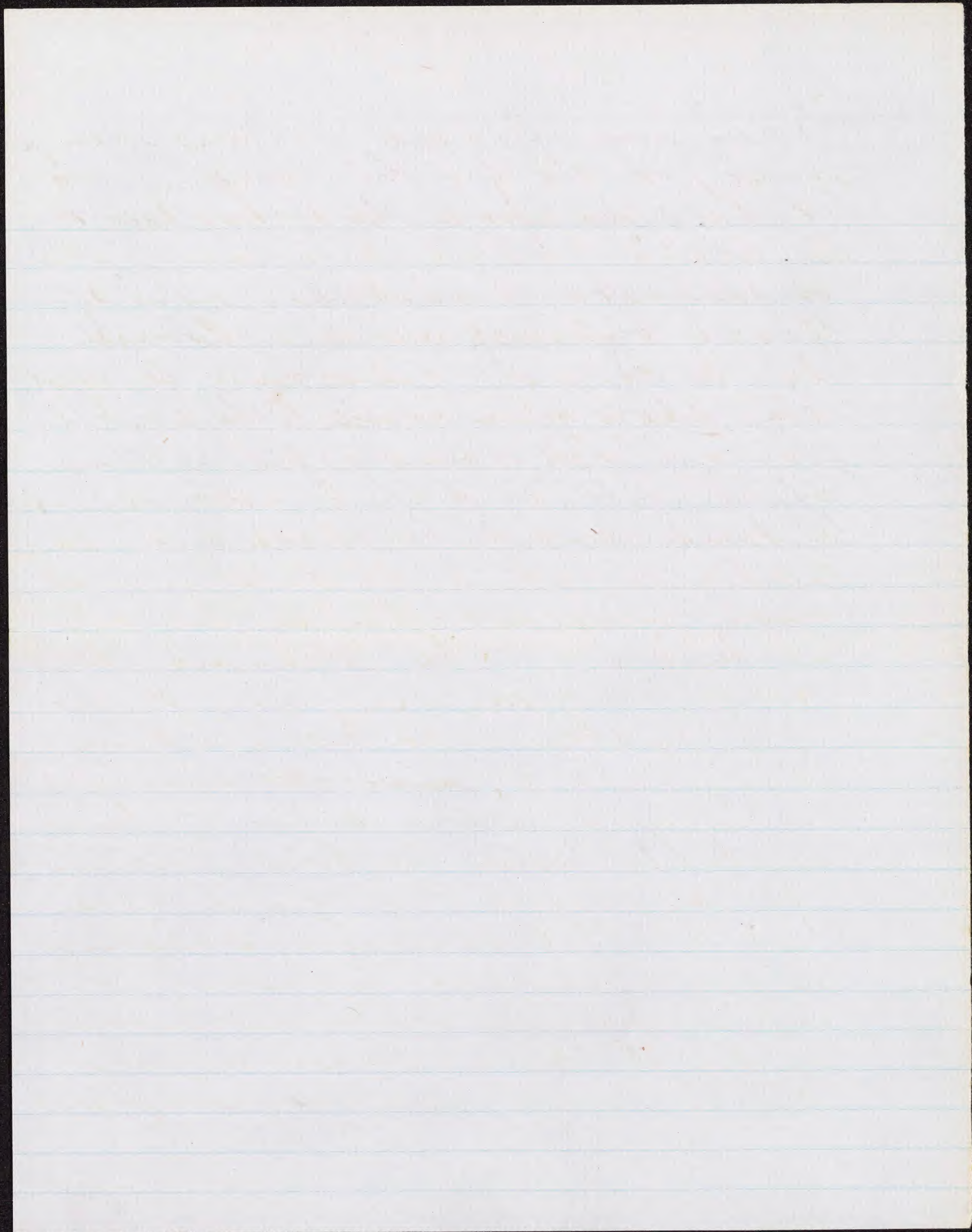




3. Is there any effective filtering arrangement provided for the drinking water, supplied from the Schuylkill to the city?"

Answer. None whatever, either effective or ineffective. Should the East Park Reservoir be used as a storage reservoir, this will give an opportunity for settling which will, if time be allowed, be tantamount to filtration.







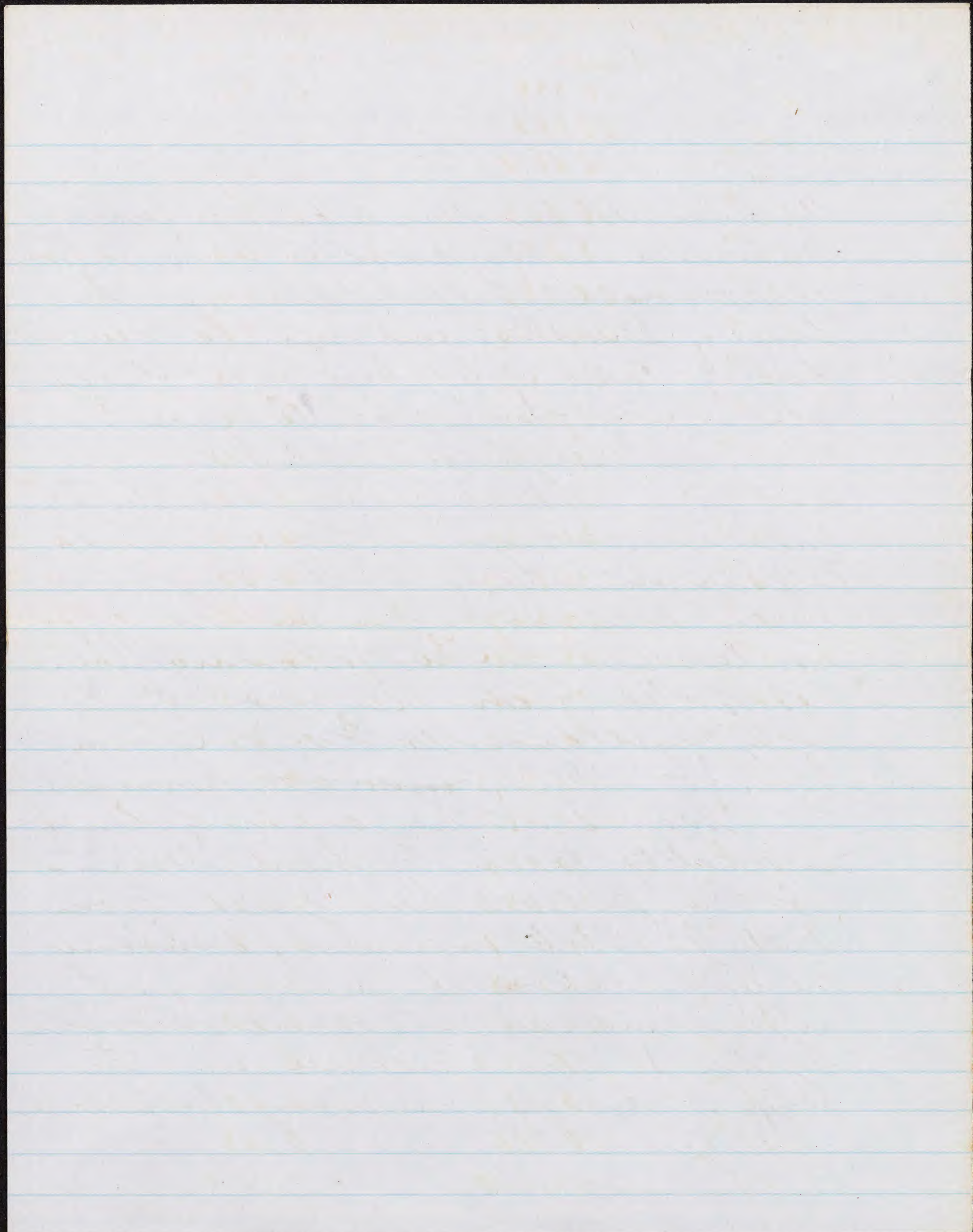
8

21. "Can the prevalence of typhoid fever be located particularly in any portion or portions of Philadelphia, on the basis of Statistics; and does the number of cases of typhoid fever fluctuate much from year to year?"

First Paragraph.

Answer. It is quite possible to indicate certain sections of Philadelphia in which typhoid fever is more prevalent than in the city at large. The following table, compiled from the report of the City Registrar Mr. Geo. E. Chambers, for 1873, ~~indicates~~ arranges the wards in the order of least mortality from Typhoid Fever - for a period ten years from 1861 to 1874 inclusive, omitting the years 1862-1865 inclusive, as exhibiting an abnormal mortality due to the existence in the City of large military hospitals.







9/	No. of Ward.	Annual Deaths, to 10,000 persons living, Population returned as caused by Typhoid Fever.	
	23 <sup>d</sup>	20,888	2.82
	22 <sup>nd</sup>	22,605	2.97
	6 <sup>th</sup>	12,064	2.99
	26 <sup>th</sup>	36,603	3.39
	25 <sup>th</sup>	18,639	3.46
	8 <sup>th</sup>	22,286	3.54
	24 <sup>th</sup>	24,932	3.72
	10 <sup>th</sup>	23,312	3.75
	9 <sup>th</sup>	16,629	3.76
	13 <sup>th</sup>	19,956	3.84
	3 <sup>d</sup>	19,149	4.01
	15 <sup>th</sup>	44,630	4.03
	20 <sup>th</sup>	56,642	4.11
	1 <sup>st</sup>	25,817	4.12
	5 <sup>th</sup>	18,736	4.27
	21 <sup>st</sup>	13,861	4.28
	2 <sup>nd</sup>	30,220	4.55
	11 <sup>th</sup>	14,845	4.90
	4 <sup>th</sup>	20,852	5.03
	28 <sup>th</sup>	10,370	5.09
	27 <sup>th</sup>	19,385	5.11
	12 <sup>th</sup>	15,171	5.15
	7 <sup>th</sup>	31,558	5.19
	14 <sup>th</sup>	22,643	5.30
	17 <sup>th</sup>	21,347	6.
	16 <sup>th</sup>	19,256	6.11
	18 <sup>th</sup>	26,366	6.58
	19 <sup>th</sup>	45,240	7.44



*[Faint, illegible handwriting on lined paper, possibly bleed-through from the reverse side. The text is arranged in approximately 20 horizontal lines across the page.]*



The first point to attract attention in the foregoing table is the absence of any correspondence between the population of the several wards and their liability to the disease under consideration at least in a fatal form. For example, the 15<sup>th</sup> and 20<sup>th</sup> adjacent wards, with a combined population of over a hundred thousand, closely packed, show a typhoidal mortality of but little more than four to the 10,000, while the 18<sup>th</sup> and 19<sup>th</sup>, also ~~adjacent~~ <sup>contiguous</sup>, with a combined population of a little over seventy thousand have a mortality of upwards of seven to the 10,000.

The only apparent exception is in the case of the 6<sup>th</sup> ward, which is wholly given up to wholesale business purposes, and which for the same reason forms an exception also <sup>to</sup> the following law which appears to govern the distribution of the disease in this city in part viz. that it shows a particular partiality for a belt of territory lying along the bank of the Dela-



The first part of the book is devoted to a description of the various forms of the human body, and the different degrees of its development. The second part is devoted to a description of the various forms of the human mind, and the different degrees of its development. The third part is devoted to a description of the various forms of the human soul, and the different degrees of its development. The fourth part is devoted to a description of the various forms of the human body, mind, and soul, and the different degrees of their development. The fifth part is devoted to a description of the various forms of the human body, mind, and soul, and the different degrees of their development. The sixth part is devoted to a description of the various forms of the human body, mind, and soul, and the different degrees of their development. The seventh part is devoted to a description of the various forms of the human body, mind, and soul, and the different degrees of their development. The eighth part is devoted to a description of the various forms of the human body, mind, and soul, and the different degrees of their development. The ninth part is devoted to a description of the various forms of the human body, mind, and soul, and the different degrees of their development. The tenth part is devoted to a description of the various forms of the human body, mind, and soul, and the different degrees of their development.

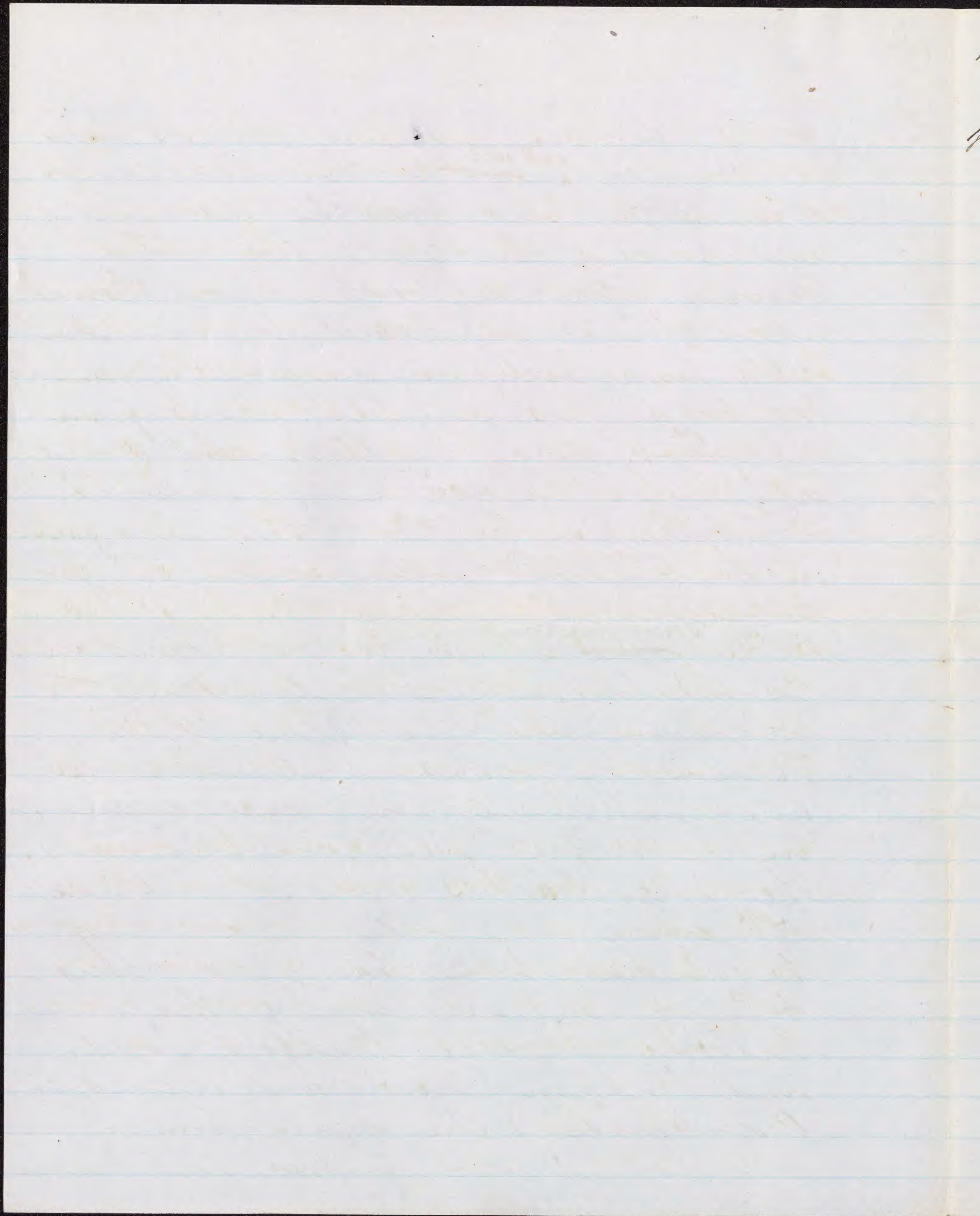


were River. for: the most part  
 rather low <sup>and wet</sup> ~~and~~ within the reach  
 of emanations from the discharging  
 sewers and liable to have the  
 sewage forced back upon them if  
 above the surface level by exception-  
 ally high tides - or heavy falls of rain.  
 The trace this influence along from  
 the <sup>1<sup>st</sup></sup> ~~first~~ ward, farthest southward  
 up through the <sup>2<sup>nd</sup></sup> ~~second~~, somewhat  
 diminished in the 3<sup>d</sup>, stronger again  
 in the 4<sup>th</sup> & 5<sup>th</sup>, absent in the 6<sup>th</sup> for  
 the reason just assigned - to the 11<sup>th</sup> &  
 12<sup>th</sup>. ~~From this point~~ <sup>From this point</sup> a new factor comes in.

The inhabitants are drinking the  
 Delaware water, supplied by the  
 Kensington works, foul with sew-  
 age contamination - and here,  
 in the 16<sup>th</sup>, 17<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup> wards,  
 the fever has its nest. Of the

7<sup>th</sup> ward it is only necessary  
 to say that like the & notorious  
 4<sup>th</sup> it is traversed by those  
 historic streets Bedford, South  
 and Shippen (now mainly altered to  
 Brambridge) the synonyms of  
 all that is vile, filthy and insan-







bury, some hundreds of all the colored people  
 of the city being here bur-  
 ed in with the most abandoned  
 and poverty stricken of the whites.  
 The only other regions which are  
 notably bad are those suburban dis-  
 tricts in which are found large  
 manufacturing villages, lining  
 the banks of the Schuylkill and its  
 little tributaries. These are the  
 21<sup>st</sup>, 27<sup>th</sup> & part of the 28<sup>th</sup>. The latter  
 also contains and borders on a  
 large number of cemeteries, and  
 is supplied, if I am not mistaken  
 by the Spring Garden water works  
 which make use of the Schuyl-  
 kill water at one of its points  
 of greatest pollution.  
 The wards which enjoy exceptional  
 immunity are those which add to sparse  
 population and high, salubrious situation,  
 such intelligence and sanitary know-  
 ledge as are to be found only among  
 the <sup>more cultured</sup> inhabitants of large cities.







#### 4. Second Paragraph.

Answer. The number of cases of typhoid fever does not fluctuate very considerably from year to year, thus indicating a constant source intimately associated with the permanent morbid constitution of the place.

The average number of deaths from this cause may fairly enough be set down at one per diem, the year round. For example six years, 1866, 67, 68, 69, 72, 73, give us respectively, 381, 367, 395, 373, 369, & 364, as their mortality.

The year 1874 adds nearly one hundred to the total of the year previous. The rapidly increasing impurity of the Schuyl-Kill water during the last year or two may perhaps be held responsible for this disproportionate increase as compared with that of the general mortality and of the population, in the same period.



Dr. B. Lee  
on

Typhoid Fever

in  
Philadelphia